

**FINAL
ENVIRONMENTAL ASSESSMENT
ADDRESSING EXPANDED HERBICIDE APPLICATIONS
AND THE RELOCATION OF DRY CHEMICAL TESTING
AT
NIAGARA FALLS AIR RESERVE STATION, NEW YORK**



JULY 2011

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ABBREVIATIONS AND ACRONYMS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter	FEMA	Federal Emergency Management Agency
107 AW	107th Airlift Wing	FIRM	Flood Insurance Rate Map
914 AW	914th Airlift Wing	FONPA	Finding of No Practicable Alternative
ACM	asbestos-containing material	FONSI	Finding of No Significant Impact
AFI	Air Force Instruction	FPPA	Farmland Protection Policy Act
AFRC	Air Force Reserve Command	GHG	greenhouse gas
ANG	Air National Guard	HAP	hazardous air pollutant
AQCR	air quality control region	HAZMART	hazardous materials pharmacy
ARS	Air Reserve Station	HEPA	high-efficiency particulate air
bgs	below ground surface	HRC	hydrogen-releasing compound
BMP	best management practice	IAP	International Airport
BOS	Base Operating Services	IARC	International Agency for Research on Cancer
BRAC	Base Realignment and Closure Act	ICRMP	Integrated Cultural Resources Management Plan
CAA	Clean Air Act	IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
CEQ	Council on Environmental Quality	IPMP	Integrated Pest Management Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	IRP	Installation Restoration Program
CFR	Code of Federal Regulations	LBP	lead-based paint
CO	carbon monoxide	LGLFRO	Lower Great Lakes Fishery Resources Office
CO ₂	carbon dioxide	mg/m ³	milligrams per cubic meter
CWA	Clean Water Act	MSDS	material safety data sheet
DOD	Department of Defense	NAAQS	National Ambient Air Quality Standards
DRMO	Defense Reutilization and Marketing Office	NEPA	National Environmental Policy Act
EA	Environmental Assessment		<i>continued on inside back cover →</i>
EO	Executive Order		
EIS	Environmental Impact Statement		
ESA	Endangered Species Act		
FAA	Federal Aviation Administration		

<i>← continued from inside front cover</i>		ppm	parts per million
NFIAQCR	Niagara Frontier Intrastate 162 Air Quality Control Region	PSD	Prevention of Significant Deterioration
NFPA	National Fire Protection Association	QD	quantity-distance
NFRAP	No Further Response Action Planned	RCRA	Resource Conservation and Recovery Act
NFTA	Niagara Frontier Transportation Authority	RI/FS	Remedial Investigation/Feasibility Study
NIOSH	National Institute for Occupational Safety and Health	ROW	right-of-way
NO ₂	nitrogen dioxide	SAAQS	State Ambient Air Quality Standard
NO _x	nitrogen oxide	SAP	Satellite Accumulation Point
NOA	Notice of Availability	SHPO	State Historic Preservation Office
NOTAM	Notice to Airmen	SIP	State Implementation Plan
NPDES	National Pollutant Discharge Elimination System	SO _x	sulfur oxide
NRCS	National Resources Conservation Service	SPCC	Spill Prevention, Control, and Countermeasures
NYANG	New York Air National Guard	SPDES	State Pollutant Discharge Elimination System
NYCRR	New York Code of Rules and Regulations	SSPP	Strategic Sustainability Performance Plan
NYSDEC	New York State Department of Environmental Conservation	SWPPP	Storm Water Pollution Prevention Plan
O ₃	ozone	TCE	trichloroethylene
OSHA	Occupational Safety and Health Administration	TMDL	Total Maximum Daily Load
PCB	polychlorinated biphenyl	TPH	total petroleum hydrocarbons
Pb	lead	tpy	tons per year
PM ₁₀	particulate matter equal to or less than 10 microns in diameter	U.S.C.	United States Code
PM _{2.5}	particulate matter equal to or less than 2.5 microns in diameter	USACE	U.S. Army Corps of Engineers
ppb	parts per billion	USAF	U.S. Air Force
PPE	personal protective equipment	USEPA	U.S. Environmental Protection Agency
		USFWS	U.S. Fish and Wildlife Service
		VOC	volatile organic compound

FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT ADDRESSING EXPANDED HERBICIDE APPLICATIONS AND THE RELOCATION OF DRY CHEMICAL TESTING AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

Pursuant to the Council on Environmental Quality's regulations for implementing procedural provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1500–1508), U.S Air Force (USAF) regulations in 32 CFR Part 989, and Department of Defense Directive 6050.1, the 914th Airlift Wing (914 AW) has prepared an Environmental Assessment (EA) to identify potential effects associated with implementing eight construction projects at Niagara Falls Air Reserve Station (ARS), New York. The EA is incorporated by reference into this Finding of No Significant Impact (FONSI).

INTRODUCTION

The 914 AW is an Air Force Reserve Command (AFRC) unit, and is the host unit at Niagara ARS, New York. The major tenant at Niagara Falls ARS is the 107th Airlift Wing (107 AW) of the New York Air National Guard (NYANG). The 107 AW is an associate wing to the 914 AW.

The 914 AW proposes to expand herbicide applications and relocate annual fire truck dry chemical testing at Niagara Falls ARS to enable personnel to perform activities necessary to meet USAF mission and emergency response activities at the installation.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to apply herbicides over an expanded area to be in accordance with the installation's approved Integrated Pest Management Plan (IPMP) along installation fence lines, railroad tracks, overrun and taxiway areas, and within improved grounds; and to relocate the area used to conduct annual fire truck dry chemical testing.

The need for the Proposed Action is to effectively control weeds to address safety, security, maintenance, and aesthetic concerns; and for the Fire Department to conduct training and testing to ensure its ability to apply dry chemical from its fire trucks. This includes conducting an annual test and discharging and managing the chemical in an environmentally responsible manner.

The Niagara Falls International Airport (IAP) operations are under Federal Aviation Administration (FAA) jurisdiction. FAA regulations require that the Niagara Falls ARS Fire Department conduct annual testing of its ability to apply dry chemical, Purple-K (sodium bicarbonate), which is effective against Class B fires that involve flammable liquids, gases, and greases. The Purple-K is released as a fine mist that is difficult to completely collect after dispersal. Due to the limited knowledge of its effects on the environment, the Niagara Falls ARS Fire Department needs a collection method and a location in which testing of Purple-K can be conducted and spent material collected with minimal release to the environment. Annual fire truck dry chemical testing is also required by National Fire Protection Association (NFPA) Requirement 403, Standard for Aircraft Rescue and Fire-Fighting Services at Airports, 2009 Edition.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Expanded Herbicide Application. The proposed herbicide application locations would be expanded from 57.77 acres to 118.60 acres, for a total expansion of 60.83 acres. The proposed activity would result in no change in officer, Reserve officer, enlisted Air Reserve Technician positions, or unit Reserve enlisted authorizations.

The Proposed Action consists of applying USEPA- and New York State Department of Environmental Conservation- (NYSDEC) registered herbicides to the installation fenceline, railroad tracks, the overrun area at the end of Runway 28 Right, and mowed lawns within the installation's improved areas. Application timing of herbicides for the fenceline, taxiways, and runway overruns would occur in the spring and summer, in accordance with manufacturer's recommendations. Application timing for the improved area would be the growing season (generally in the spring, summer, and early fall), in accordance with manufacturer's recommendations.

Herbicides used would be consistent with those previously used at the installation, including Roundup Pro™ or Kleenup Pro™, Triamine®, AM-40, and Barricade or equivalent herbicides, as approved in the current Niagara Falls ARS IPMP (NFARS 2009). The spring broadleaf weed-control treatment in the improved lawn areas would use Barricade or an approved equivalent herbicide.

Dry Chemical Testing. Dry chemical testing is conducted annually to ensure that the equipment used to dispense dry chemical is functioning properly. Currently, the testing is conducted south of Building 700, the former Fire Station. The testing is proposed to be conducted to the immediate southeast of the new Fire Station, Building 821. The EA analyzes the impact of relocating the site for annual fire truck dry chemical testing and associated temporary containment system used to capture the dry chemical (Purple K).

Purple-K is a material used to extinguish Class B fires (fires involving flammable liquids and gases) and Class C fires (fires involving live electrical equipment). In an effort to reduce the release of Purple-K dry chemical to the environment, Fire Department personnel would test equipment by spraying the chemical into a 50-foot, 20-inch round plastic tube temporary containment system with a high-efficiency particulate air (HEPA) filter attached to the closed end. Spent material that might escape from the bag would be collected, and the spent dry chemical would be turned in to Civil Engineering and disposed of off installation as solid waste through the Defense Reutilization and Marketing Office (DRMO).

No Action Alternative. Under the No Action Alternative, the Proposed Action would not be implemented and there would be no change from existing herbicide applications and the location of dry chemical testing at the installation. Broadleaf weeds would continue to be rampant in improved areas, as the current rate of herbicide application is inadequate. Ubiquitous weed growth in improved and other areas on the installation would decrease the aesthetic value, and could cause safety issues in areas where driver visibility would be impacted. Dry chemical testing would not be conducted adjacent to the new Fire Station. Fire personnel would continue to conduct the annual testing to the south of Building 700, and a Notice to Airmen would continue to be required. The No Action Alternative would not address USAF mission concerns at Niagara Falls ARS.

ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

Herbicide Application. For the Proposed Action, a nonchemical control (manually pulling weeds) alternative was considered but deemed infeasible because the area needing weed control is quite large (118.60 acres) and substantial labor hours would be required. Therefore, no additional alternatives to the proposed herbicide application were identified for further detailed analysis in the EA.

Dry Chemical Testing. An alternative to the Proposed Action would (1) establish a process for the Fire Department to test its equipment and collect the spent dry chemical, and (2) establish a location on the Niagara Falls ARS for the Fire Department to conduct the testing. No other processes or methods to test the Fire Department's equipment and collect the spent dry chemical were identified as being feasible.

The Fire Department had proposed to conduct the testing in the fire training area. However, due to the proximity of wetlands, that site was deemed not to be viable. No other locations on the installation other than the preferred location were identified that would provide a comparable level of command and control of dry chemical testing.

SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED ACTION

Analyses performed in the EA addressed potential effects on air quality, land use, safety, water and soil resources, biological resources, and hazardous materials and waste. Short-term, negligible to minor, direct adverse effects resulting from herbicide application and dry chemical testing would affect safety, water and soil resources, and hazardous materials and wastes. A long-term, beneficial impact on biological resources would occur by allowing nontarget vegetative species to better compete with the target species. No direct effects on the 100-year floodplain, wetlands, threatened and endangered species, or cultural resources would be expected.

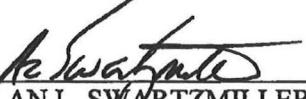
The analysis presented in the EA indicates that the expansion of herbicide application or dry chemical testing would not have a significant direct, indirect, or cumulative effects on the quality of the natural or human environment.

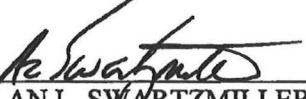
PUBLIC REVIEW AND INTERAGENCY COORDINATION

The USAF initiated the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process for this Proposed Action on 12 May 2011, in accordance with USAF policy. A 30-day public and agency review of the Draft EA and Draft FONSI occurred in accordance with NEPA and USAF regulations. A Notice of Availability for this action was published in *The Niagara Gazette* on 12 May 2011, the Draft EA and Draft FONSI were made available at the Niagara Falls Public Library, and copies of the documents were distributed to the addresses on the IICEP distribution list. No comments were received.

FINDING OF NO SIGNIFICANT IMPACT

I conclude that the environmental effects of the expanded herbicide application and dry chemical testing at Niagara Falls ARS are not significant, that preparation of an Environmental Impact Statement is not necessary, and that a FONSI is appropriate. The preparation of the EA is in accordance with NEPA, Council on Environmental Quality regulations, and 32 CFR Part 989, as amended.


ALLAN L. SWARTZMILLER, Colonel, USAFR
Commander


8 Aug 2011

Date

COVER SHEET
FINAL
ENVIRONMENTAL ASSESSMENT
ADDRESSING EXPANDED HERBICIDE APPLICATIONS AND
THE RELOCATION OF DRY CHEMICAL TESTING AT
NIAGARA FALLS AIR RESERVE STATION, NEW YORK

Responsible Agencies: U.S. Air Force (USAF), Air Force Reserve Command (AFRC), and 914th Airlift Wing (914 AW), Niagara Falls Air Reserve Station (ARS), New York.

Affected Location: Niagara Falls ARS, New York.

Proposed Action: Expand herbicide applications and relocate dry chemical testing at Niagara Falls ARS.

Report Designation: Final Environmental Assessment (EA).

Abstract: The purpose of the Proposed Action is to expand herbicide applications and relocate annual fire truck dry chemical testing at Niagara Falls ARS to enable personnel to perform activities necessary to meet USAF mission and emergency response activities at the installation.

Under the No Action Alternative, herbicide applications would not be expanded and the relocation of dry chemical testing would not occur. There would be no change from existing conditions at the installation.

The EA evaluates the Proposed Action and the No Action Alternative. Resources that are considered in the impacts analysis include air quality, noise, land use, geological resources, water resources, biological resources, cultural resources, socioeconomic and environmental justice, infrastructure, hazardous materials and waste, and safety. The Draft EA was made available to the public.

Written comments and inquiries regarding this document should be directed to 914 MSG/CEV, Niagara Falls ARS, 2405 Franklin Drive, Niagara Falls, New York 14304-5063.

FINAL

**ENVIRONMENTAL ASSESSMENT
ADDRESSING
EXPANDED HERBICIDE APPLICATIONS AND THE
RELOCATION OF DRY CHEMICAL TESTING
AT
NIAGARA FALLS AIR RESERVE STATION,
NEW YORK**

**914TH AIRLIFT WING
MISSION SUPPORT GROUP/ENVIRONMENTAL
2405 Franklin Drive
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JULY 2011

FINAL
ENVIRONMENTAL ASSESSMENT
ADDRESSING PROPOSED EXPANDED HERBICIDE APPLICATIONS AND THE
RELOCATION OF DRY CHEMICAL TESTING AT
NIAGARA FALLS AIR RESERVE STATION, NEW YORK

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1. Purpose of and Need for the Proposed Action

1.1 Background

The 914th Airlift Wing (914 AW) is an Air Force Reserve Command (AFRC) unit and the host unit at Niagara Falls Air Reserve Station (ARS), New York. The 914 AW is assigned 12 C-130H transport aircraft that perform diverse roles, including airdrop of supplies, airlift support, aeromedical missions, and natural disaster relief missions. The major tenant at Niagara Falls ARS is the 107th Airlift Wing (107 AW) of the New York Air National Guard (NYANG). The 2005 Base Realignment and Closure Act (BRAC) final approved recommendations included the formation of an AFRC/Air National Guard (ANG) associate wing for C-130 aircraft that would support flight operations and be compatible with joint use of the ARS as a civilian airport (BRAC 2005).

As part of the decisionmaking process, the 914 AW is conducting an environmental analysis to determine the potential environmental impacts of the Proposed Action at Niagara Falls ARS. This Environmental Assessment (EA) analyzes the Proposed Action of expanding herbicide applications and relocating dry chemical testing and the No Action Alternative. If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents reasons why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) would not be necessary. If significant environmental issues are identified that cannot be mitigated to insignificance, an EIS would be prepared, or the Proposed Action would be abandoned and no action would be taken.

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to apply herbicides over an expanded area along installation fence lines, railroad tracks, overrun and taxiway areas, and within improved grounds to be in accordance with the installation's approved Integrated Pest Management Plan (IPMP); and to relocate the area used to conduct annual fire truck dry chemical testing and associated temporary containment system used to capture the dry chemical.

The need for the Proposed Action is to effectively control weeds to address safety, security, maintenance, and aesthetic concerns; and for the Fire Department to conduct training and testing to ensure its ability to apply dry chemical from its fire trucks. This includes conducting an annual test and discharging and managing the chemical in an environmentally responsible manner.

The Niagara Falls International Airport (IAP) operations are under Federal Aviation Administration (FAA) jurisdiction. FAA regulations require that the Niagara Falls ARS Fire Department conduct annual testing of its ability to apply dry chemical, Purple-K (sodium bicarbonate), which is effective against Class B fires that involve flammable liquids, gasses, and greases. The Purple-K is released as a fine mist that is difficult to completely collect after dispersal. Due to the limited knowledge of its effects on the environment, the Niagara Falls ARS Fire Department needs a collection method and a location in which testing of Purple-K can be conducted and spent material collected with minimal release to the environment. Annual fire truck dry chemical testing is also required by the National Fire Protection Association (NFPA) Requirement 403, *Standard for Aircraft Rescue and Fire-Fighting Services at Airports*, 2009 Edition.

1.3 Location of the Proposed Action

As shown on **Figure 1-1**, Niagara Falls ARS is in Niagara County in western New York, approximately 6 miles east of the City of Niagara Falls and 20 miles north of the City of Buffalo. Adjacent communities include the towns of Niagara, Lewiston, and Wheatfield; and the City of Niagara Falls. Niagara Falls IAP is directly south of and contiguous to the installation. As shown on **Figure 1-2**, the boundary between the airport and the installation generally coincides with the channel of Cayuga Creek, which flows from east to west, south of the installation flightline apron. The installation occupies 985 acres of land north of Niagara Falls IAP. Vehicular access to Niagara Falls ARS is provided through the installation's Main Gate, off Lockport Road.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

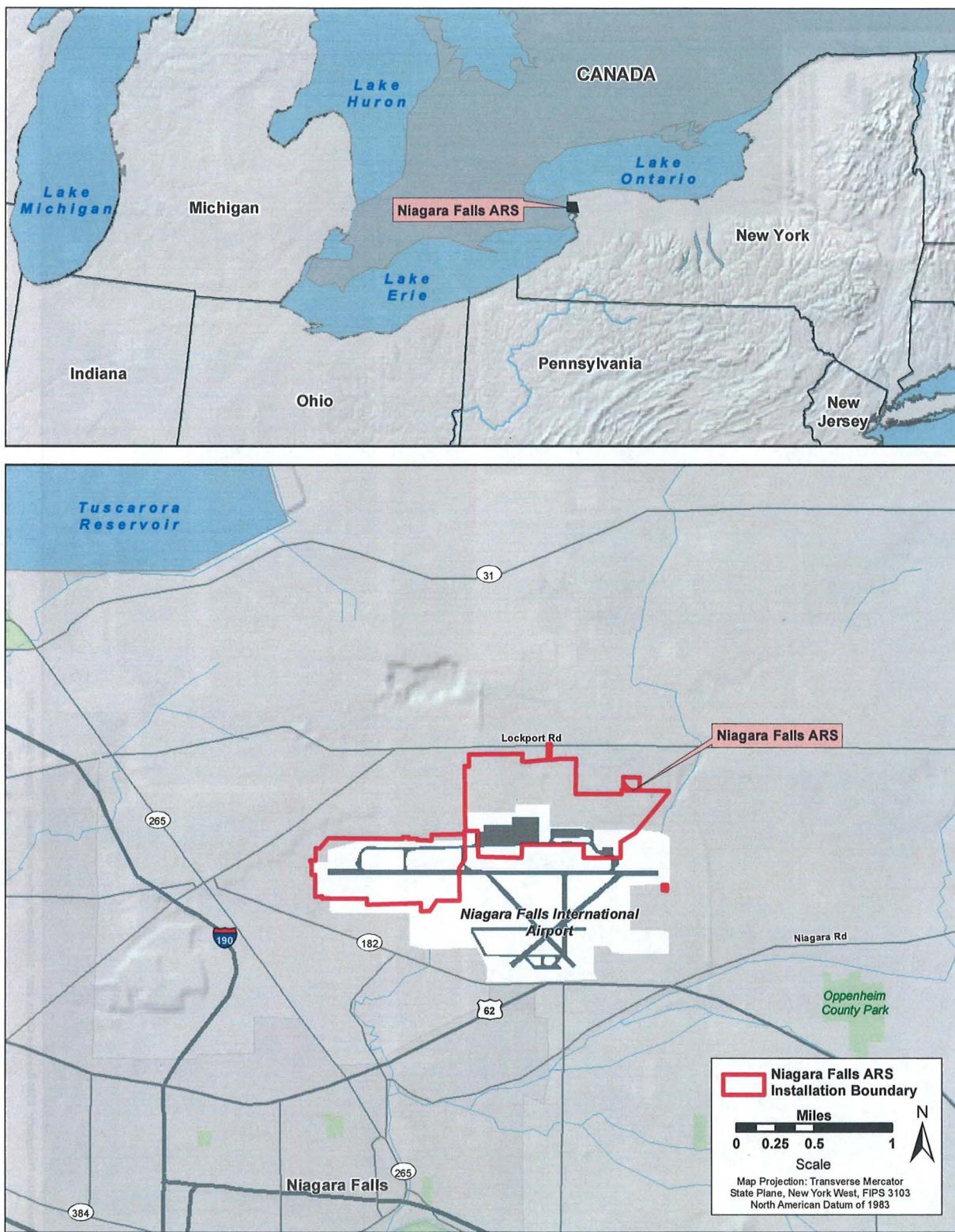
The National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Section 4321–4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help decisionmakers make well-informed decisions based on an understanding of the potential environmental consequences and take actions to protect, restore, or enhance the environment. NEPA established the Council on Environmental Quality (CEQ) that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations mandate that all Federal agencies use a prescribed, structured approach to environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action.

The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee Federal policy in this process. The CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare a FONSI/Finding of No Practicable Alternative (FONPA), where a FONPA is appropriate, or whether the preparation of an EIS is necessary. The EA can aid in an agency's compliance with NEPA when an EIS is unnecessary and facilitate preparation of an EIS when one is required.

Air Force Policy Directive 32-70, *Environmental Quality*, states that the U.S. Air Force (USAF) will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is its *Environmental Impact Analysis Process* that is detailed in 32 CFR Part 989, as amended.

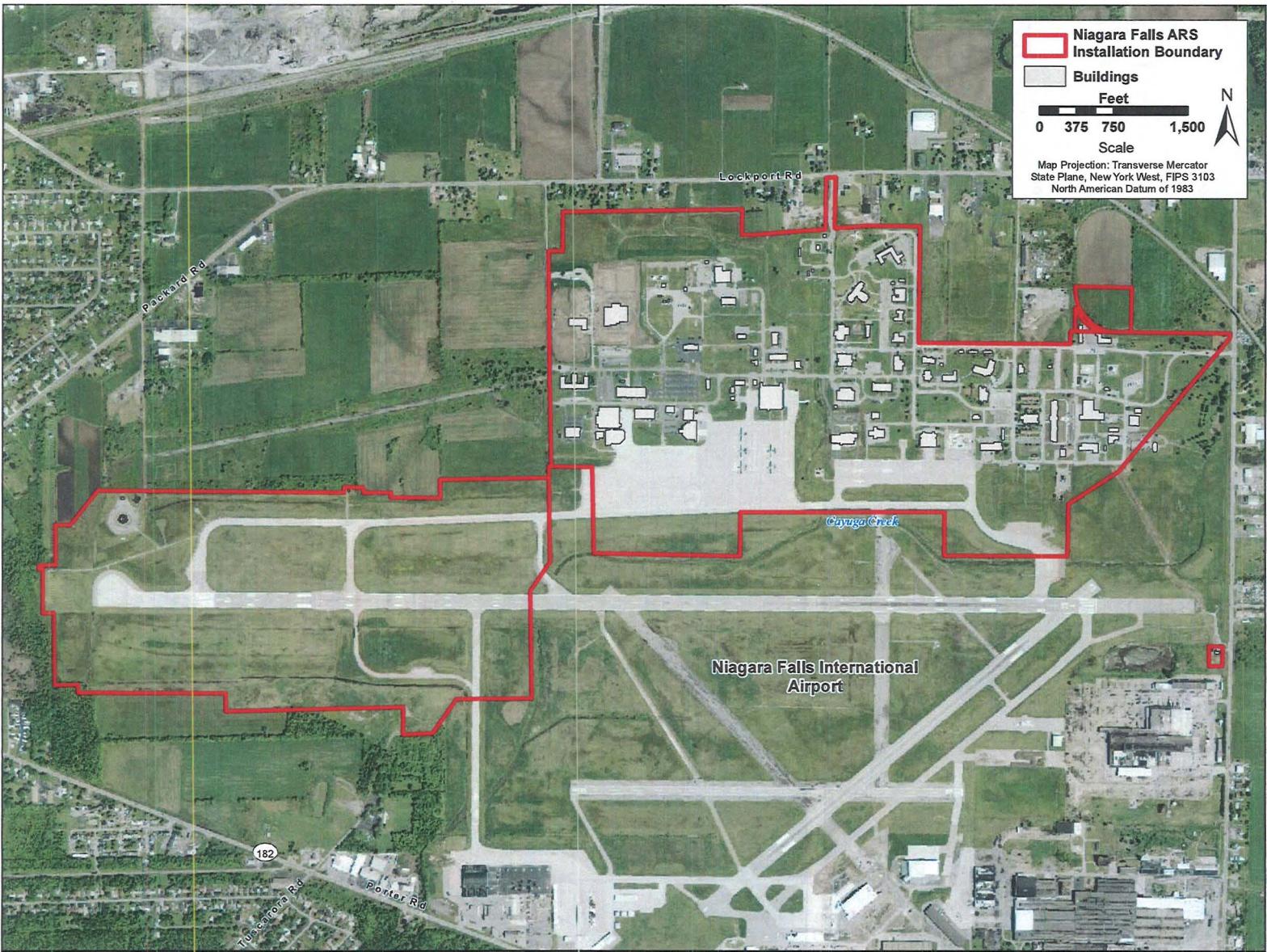
1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.”



Source of map data: ESRI StreetMap USA 2007. Source of Installation Boundary: Niagara Falls ARS, 2006.

Figure 1-1. Niagara Falls ARS Vicinity Map



Sources of Aerial Photography: ESRI Resource Center, 2007. Installation Boundary and Buildings: Niagara Falls ARS, 2008

Figure 1-2. Niagara Falls ARS Installation Map

1.5 Scope of the Analysis

The EA will examine potential effects of the Proposed Action and No Action Alternative on eight resource areas: air quality, noise, land use, safety, geological resources, water resources, biological resources, and hazardous materials and waste. These resource areas were identified as being potentially affected by the Proposed Action, and include applicable critical elements of the human environment whose review is mandated by Executive Order (EO), regulation, or policy. **Appendix A** contains examples of relevant laws, regulations, and other requirements that are often considered as a part of the analysis.

1.6 Public Involvement

The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. Air Force Instruction (AFI) 32-7060 requires AFRC to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination and implements scoping requirements. Through the IICEP process, the 914 AW will notify relevant Federal, state, and local agencies; and the surrounding communities of the action proposed and provided them sufficient time to make known their environmental concerns specific to the action.

The public involvement process will also provide the AFRC with the opportunity to cooperate with and consider state and local views in implementing this Federal proposal. The 914 AW will coordinate with agencies such as U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); State Historic Preservation Office (SHPO); and other Federal, state, and local agencies. **Appendix B** includes a copy of the letter that will be mailed to the agencies for the EA and the distribution list. A copy of the Draft EA and Draft FONSI will be sent as an attachment to each person on the list and made available in community libraries to enhance the opportunity for public involvement. **Appendix B** will also include agency responses, if received.

A Notice of Availability (NOA) for the Draft EA and Draft FONSI was published in the *Niagara Gazette* on 12 May 2011 to solicit comments on the Proposed Action and involve the local community in the decisionmaking process (see **Appendix B**). No comments were received on the EA.

1.7 Organization of this Document

This EA is organized into six sections. **Section 1** provides the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action and the No Action Alternative. **Section 3** lists references used in the preparation of this document. **Section 3** contains a general description of the biophysical resources and baseline conditions that could potentially be affected by the Proposed Action and the No Action Alternative. **Section 4** presents an analysis of the potential environmental consequences of implementing the Proposed Action and the No Action Alternative. **Section 5** includes an analysis of the potential cumulative impacts at Niagara Falls ARS. **Section 6** lists the preparers of the document. **Section 7** lists the references used in the preparation of the document. **Appendix A** contains applicable laws, regulations, policies, and planning criteria potentially relevant to NEPA analysis. **Appendix B** includes IICEP materials. **Appendix C** includes Material Safety Data Sheets (MSDSs) on herbicides and Purple-K dry chemical.

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2. Description of Proposed Action and Alternatives

2.1 Introduction

This section describes the Proposed Action and the alternatives considered. As discussed in **Section 1.4.1**, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a proposed action, which are defined in **Section 1.2**. CEQ regulations specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail in accordance with CEQ regulations and provides a baseline against which an action alternative can be compared.

2.2 Detailed Description of the Proposed Action

The purpose of the Proposed Action is to apply herbicides over an expanded area along installation fence lines, railroad tracks, overrun and taxiway areas, and within improved grounds to be in accordance with the installation's approved IPMP; and to relocate the area used to conduct annual fire truck dry chemical testing and associated temporary containment system used to capture the dry chemical. Previous EAs for herbicide applications and dry chemical testing were completed in 2005 and 2006; this EA serves as an update to those EAs (Niagara Falls ARS 2005a, Niagara Falls ARS 2006). The two operations associated with the Proposed Action are discussed in detail in the following paragraphs.

2.2.1 Herbicide Application

The Proposed Action would be conducted without interruption to installation services. **Figure 2-1** identifies the current and proposed locations for herbicide treatment. The proposed locations would be expanded from 57.77 acres to 91.06 acres, for a total expansion of 33.29 acres. Any waste generated as part of the Proposed Action (such as used protective clothing, empty containers, and rinse water) would be disposed of by the Base Operating Services (BOS) contractor according to all applicable regulations (see **Section 2.2.1, Cleanup**). The proposed activity would result in no change in officer, Reserve officer, enlisted Air Reserve Technician positions, or unit Reserve authorizations.

The Proposed Action consists of applying USEPA- and New York State Department of Environmental Conservation- (NYSDEC) registered herbicides to the installation fenceline, railroad tracks, the overrun area at the end of Runway 28 Right, and mowed lawns within the installation's improved areas (as shown in **Figure 2-1**). Railroad tracks outside of the fenceline and parallel with Walmore Road would no longer be treated; however, the acreage to be treated on Niagara Falls ARS would still be expanded. Application timing of herbicides for the fenceline, taxiways, and runway overruns would occur in the spring and summer, in accordance with manufacturer's recommendations. Application timing for the improved area would be the growing season (generally in the spring, summer, and early fall), in accordance with manufacturer's recommendations.

Herbicides used would be consistent with those previously used at the installation, including Roundup ProTM or Kleenup ProTM, Triamine[®], AM-40, and Barricade or equivalent herbicides, as approved in the current Niagara Falls ARS IPMP, as updated (Niagara Falls ARS 2009a). The spring broadleaf weed-control treatment in the improved lawn areas would use Barricade or an approved equivalent herbicide.

Safety. The BOS contractor would be responsible for following ground safety, Occupational Safety and Health Administration (OSHA) regulations, and MSDS recommendations. The contractor would be required to conduct work activities in a manner that does not pose any risk to workers or personnel.

Contractors would wear the maximum personal protective equipment (PPE) required by MSDSs for each herbicide being applied. Procedures to ensure contractor safety are described in the Niagara Falls ARS IPMP EA (Niagara Falls ARS 2005a).

Herbicide Mixing. No facility exists on-installation where mixing of herbicides can occur. Granular weed and feed (Lesco® or similar) is used so mixing is not an issue. No storage exists on the installation with the exception of small quantities of Roundup Pro™ and granular weed and feed stored at the Hazardous Materials Pharmacy (HAZMART) (Building 207).

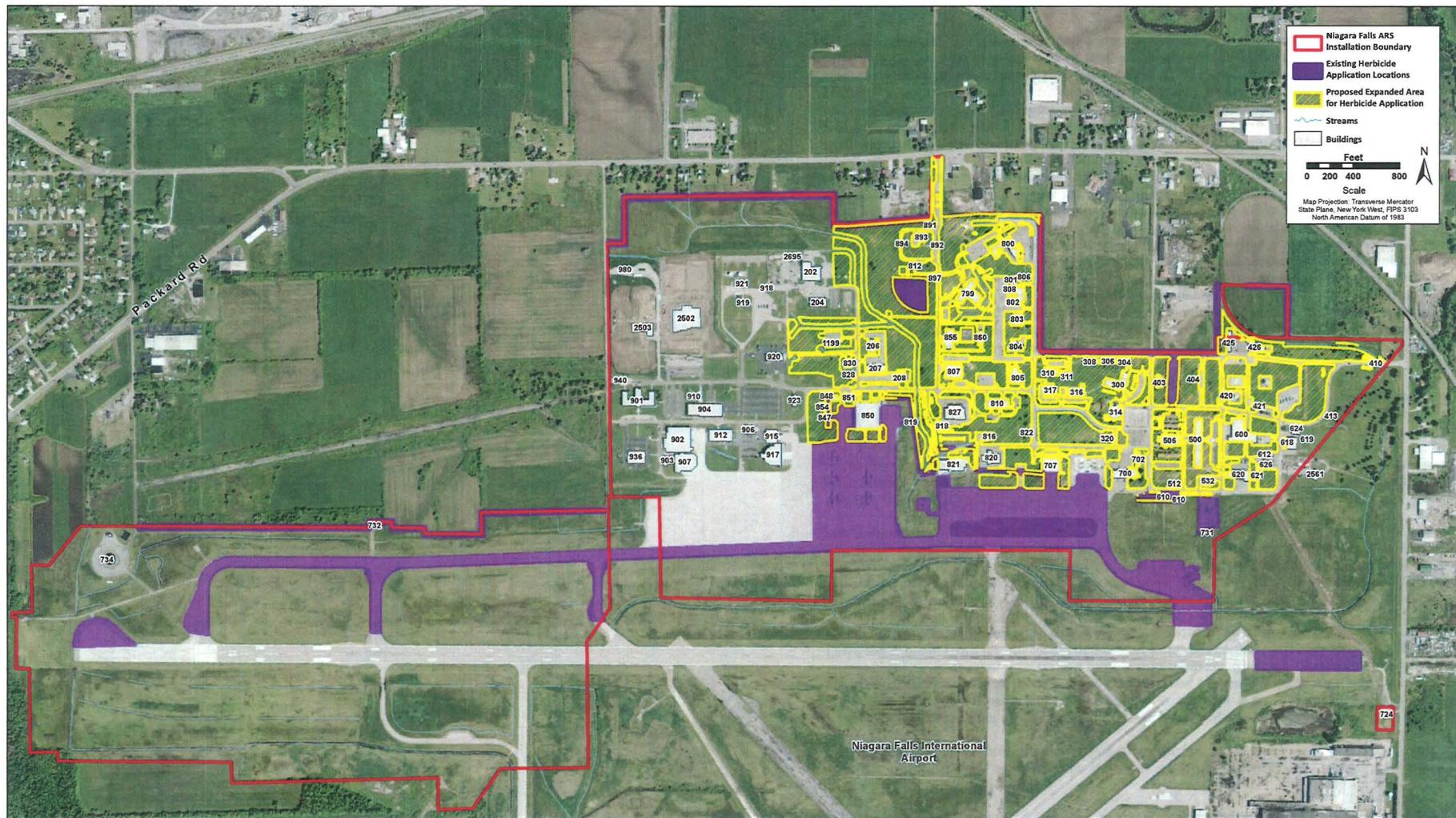
A licensed BOS contractor would be responsible for storage, mixing, and loading of herbicides off installation. Applying a tank mixture of herbicides, or a mixture herbicide and a liquid fertilizer, reduces time, labor, energy, and equipment costs. **Table 2-1** lists a few of the proposed herbicide combinations and the areas where they would be applied. All applicable directions, restrictions, and label precautions would be followed. The use of a combination of herbicides also enables a broader spectrum of weeds to be targeted with each application. The percent of each herbicide used in the mixture would be established in accordance with USEPA recommendations, MSDS information, and manufacturer labels.

Application. All herbicides would be applied during the growing season in accordance with manufacturer's recommendations. The maximum herbicides application frequency for broadleaf weed control in turf areas would be two applications per year. The maximum herbicide application frequency for tree and landscape bed weed control would be four times per year.

The treatment area for the landscaped beds is 0.96 acres. The treatment area for the tree beds is 0.11 acres.

Along the installation fenceline, a pre-emergent and growth-retardant combination of herbicides, which retards growth but does not turn weeds brown, would be applied. A maximum of two applications would occur throughout the year; one application would occur in the fall and one in the spring or summer. For the railroad tracks, overrun area at the end of Runway 28 Right, and taxiways, the installation would apply an herbicide mixture to eradicate existing vegetation and control emerging weeds using a combination of nonselective and pre-emergent herbicides. For the lawns in the improved areas, and in accordance with the approved IPMP to minimize the use of chemical herbicides, the broadleaf weed control would be applied during the growing season in accordance with manufacturer's recommendations. The perimeter and security fences to be treated would each be approximately 26,660 feet long. The herbicide would be applied to an area totaling 12 inches inside and outside of the fenceline. The herbicides would be applied on the railroad track beds (to the width of the railroad tie, approximately 8 feet) that are within the installation boundary. The railroad track beds are approximately 1,100 feet in length. Herbicide applications would be directed to the width of the tie area and not to the rock berms around the tracks.

Broadleaf weed control would be applied to mowed lawns within the installation's boundary in the improved area, but does not include areas adjacent to or around the runways or semi-improved areas north and west of Johnson Street. The improved area that could be treated is shown in **Figure 2-1**. The total areas proposed for the herbicide application of the fencelines, railroad tracks, Runway 28 Right overrun and taxiways, and the improved lawn areas to be treated are approximately 0.612, 0.10, 1.77, and 87.50 acres, respectively. Herbicide applications would be expanded from 57.77 acres to 91.06 acres, for a total expansion of 33.29 acres. **Figures 2-2 to 2-4** present examples of installation fenceline, railroad tracks, and lawns that would be treated.



Sources of Aerial Photography: ESRI Resource Center, 2007. Installation Boundary and Buildings: Niagara Falls ARS, 2008

Figure 2-1. Location of Existing and Proposed Herbicide Applications

Herbicides would not be applied down the banks leading to any ditches, streams, creeks, or other water bodies. Banks of berms and other developed areas not leading to water can be sprayed with the herbicide, but any applications made to the soil would not be permitted to run off into water-filled areas. This would avoid damage to ecosystems and the biota in those ecosystems, such as crawfish living in drainage ditches.

A listing of the herbicides expected to be applied at the installation under the Proposed Action and a description of their uses is provided in the following paragraphs.

Roundup Pro™ or Kleenup Pro™. Both products are post-emergent (i.e., kills existing weeds, but does not prevent new growth) herbicides with glyphosate as the main active ingredient. Glyphosate is a nonselective herbicide used on many food and nonfood crops, and along noncrop areas such as roadsides. When applied at lower rates, it serves as a plant growth regulator. The most common uses of Roundup Pro™ and Kleenup Pro™ include control of broadleaf weeds and nuisance or invasive grasses in pastures, soybean fields, cornfields, decorative landscaping, lawns and turf, and rights-of-way (ROWS).

Triamine®. Triamine® is a nonflammable stable solution containing a mixture of three herbicides: Dimethylamine Salt (2,4-D), dichlorprop Dimethylamine Salt (2,4-DP), and mecoprop Dimethylamine Salt. Triamine® is for use on ornamental turf lawns (residential, industrial, and institutional), parks, cemeteries, athletic fields, golf courses, and similar turf areas. Triamine® is a post-emergent selective broadleaf herbicide.

AM-40. AM-40's active ingredient is 2,4-D, which is a colorless, odorless powder used as a selective pre-emergent (i.e., stops plant germination) or post-emergent herbicide for the control of broadleaf weeds in agriculture, and for control of woody plants along roadsides, railways, and utilities ROWs. It has been most widely used on crops such as wheat and corn, and on pasture and rangelands.

Barricade. Barricade controls susceptible weeds by preventing growth and development of newly germinated seeds. It is a selective pre-emergent herbicide that provides control of grass and broadleaf weeds in established turf grasses, lawns and sod, and hardwood seedling nurseries.

Cleanup. Cleanup after herbicide application would involve rinsing tools and equipment, and rinsing and disposing of empty herbicide containers. Tools, vehicles, and equipment would be cleaned using detergent and the appropriate decontamination solution, as specified in Technical Information Memorandum 15, *Pesticide Spill Prevention and Management* (DOD 1992). The decontamination solution would be applied to contaminated equipment by soaking the equipment in a pail filled with solution or using a scrub brush. All tools and surfaces would be thoroughly rinsed with sparing amounts of clean water. All rinse water and spent decontamination solution would be collected in drip pans or other suitable containers and transferred to a properly labeled leakproof container for disposal. Empty herbicide containers would be triple-rinsed. Rinsate would be added to the spray mix or disposed of on the application site at a rate that does not exceed amounts addressed on the label. Empty and rinsed herbicide containers would be punctured and disposed of according to label directions.

Niagara Falls ARS has developed an emergency response manual for all types of hazardous spills including spills for pesticides and herbicides. The *Hazardous Material Emergency Planning and Response (HAZMAT) Plan* (December 2008) contains guidelines for clean-up procedures. Any spilled pesticides would be cleaned up in accordance with the general outline in the plan with specific guidance taken from Technical Memorandum 15 to minimize the potential for pesticide spills (DOD 1992, Niagara Falls ARS 2008a). All vehicles used in applying or transporting pesticides or herbicides would be required to carry spill kits that include multi-use absorbents and deflection booms.

Table 2-1. Proposed Herbicide Application Summary

Area of Application	Herbicide Combination*	Application Times	Acres to be Treated	Maximum Estimated Application Volume per Treatment (pints)	Purpose
Fenceline	<ul style="list-style-type: none"> • <i>Pre-emergent:</i> AM-40, Barricade • <i>Post-emergent:</i> Roundup Pro™ or Kleenup Pro™, Triamine® 	Growing season, in accordance with manufacturer's recommendations. Maximum application of twice per year.	0.61	AM-40: 0.61 Barricade: 0.61 Roundup Pro™: 4.90 Kleenup Pro™: 1.22 Triamine®: 2.44	Retard weed growth and help to eradicate resilient weeds.
Railroad Tracks, Taxiways, and Runway Overruns	<ul style="list-style-type: none"> • <i>Pre-emergent:</i> AM-40 • <i>Post-emergent:</i> Roundup Pro™ or Kleenup Pro™, Triamine® 	Growing season, in accordance with manufacturer's recommendations. Maximum application of twice per year.	1.88	AM-40: 1.88 Roundup Pro™: 15.04 Kleenup Pro™: 3.76 Triamine®: 7.52	Eradicate vegetation and help to eradicate resilient weeds.
Improved Areas	<ul style="list-style-type: none"> • <i>Pre-emergent:</i> Barricade • <i>Post-emergent:</i> Triamine® 	Growing season, in accordance with manufacturer's recommendations. Maximum application of twice per year.	87.50	Barricade: 116.10 Triamine®: 464.40	Broadleaf weed control.
Tree Beds and Landscape Beds	<ul style="list-style-type: none"> • <i>Pre-emergent:</i> Barricade • <i>Post-emergent:</i> Roundup Pro™, Triamine® 	Growing season, in accordance with manufacturer's recommendations. Maximum application of four times per year.	1.07	Barricade: 1.07 Roundup Pro™: 8.56 Triamine®: 4.28	To control weed growth in tree beds and landscape beds.

Sources: Monsanto 2004, Verdicon undated, Nufarm Americas, Inc. undated, Syngenta Crop Protection 2010, Nufarm Americas, Inc. 2005.

Notes:

* Herbicides can be used individually or in combination in accordance with manufacturer's recommendations.

Herbicide volumes were calculated using the following recommended volumes: AM-40, 1 pint/acre; Barricade, 1 pint/acre; Roundup Pro™, 8 pints/acre; Kleenup Pro™, 2 pints/acre; Triamine®, 4 pints/acre.



Figure 2-2. Example of Fenceline to be Treated



Figure 2-3. Example of Railroad Tracks to be Treated



Figure 2-4. Example of Improved Area to be Treated for Broadleaf Weeds

2.2.2 Dry Chemical Testing

Dry chemical testing is conducted annually to ensure that the equipment used to dispense dry chemical is functioning properly. Currently, the testing is conducted south of Building 700, the former Fire Station. The testing is proposed to be conducted to the immediate southeast of the new Fire Station, Building 821 (see **Figure 2-5**). The EA will analyze the impact of relocating the site for annual fire truck dry chemical testing and associated temporary containment system used to capture the dry chemical. Environmental constraints associated with the Proposed Action are shown in **Figure 2-6**.

The test typically requires the Fire Department equipment to run for 1 minute or less. In an effort to reduce the release of Purple-K dry chemical to the environment, Fire Department personnel would test equipment by spraying the chemical into a 50-foot, 20-inch round plastic tube temporary containment system with a high-efficiency particulate air (HEPA) filter attached to the closed end. Spent material that might escape from the bag would be collected, and the spent dry chemical would be turned in to Civil Engineering and disposed of off installation as solid waste through the Defense Reutilization and Marketing Office (DRMO). The current location of the dry chemical testing requires a notice to airmen (NOTAM). At the proposed new location, no NOTAM would be required. A regulated (Waters of the United States) drainageway is present to the south of the proposed site, and would be avoided.

Purple-K is a material used to extinguish Class B fires (fires involving flammable liquids and gases) and Class C fires (fires involving live electrical equipment). Purple-K dry chemical has multiple manufacturers, but consists of a mixture of potassium bicarbonate (75 to 90 percent); sodium bicarbonate (0 to 15 percent); and smaller amounts of mineral silicates, mica, and dyes/pigments (Amerex 1988, Ansul 2008). Some manufacturers list crystalline silica as a hazardous ingredient (Pyro-Chem 2007, Kidde Dual Spectrum 1996). The International Agency for Research on Cancer (IARC) lists crystalline

silica as a probable human carcinogen. Agencies such as OSHA and the National Institute for Occupational Safety and Health (NIOSH) have established recommended exposure limits (USEPA 1996). Purple-K is a moderate irritant to the respiratory system and eyes and a mild irritant to the skin (Amerex 1988, Pyro-Chem 2007, Kidde Dual Spectrum 1996).

Although it is not listed as a hazardous waste, Niagara Falls ARS has determined that the release of Purple-K dry chemical to the environment should be minimized and spent material should be contained. Manufacturer's MSDSs on Purple-K are included as **Appendix C** of this EA.

2.3 No Action Alternative

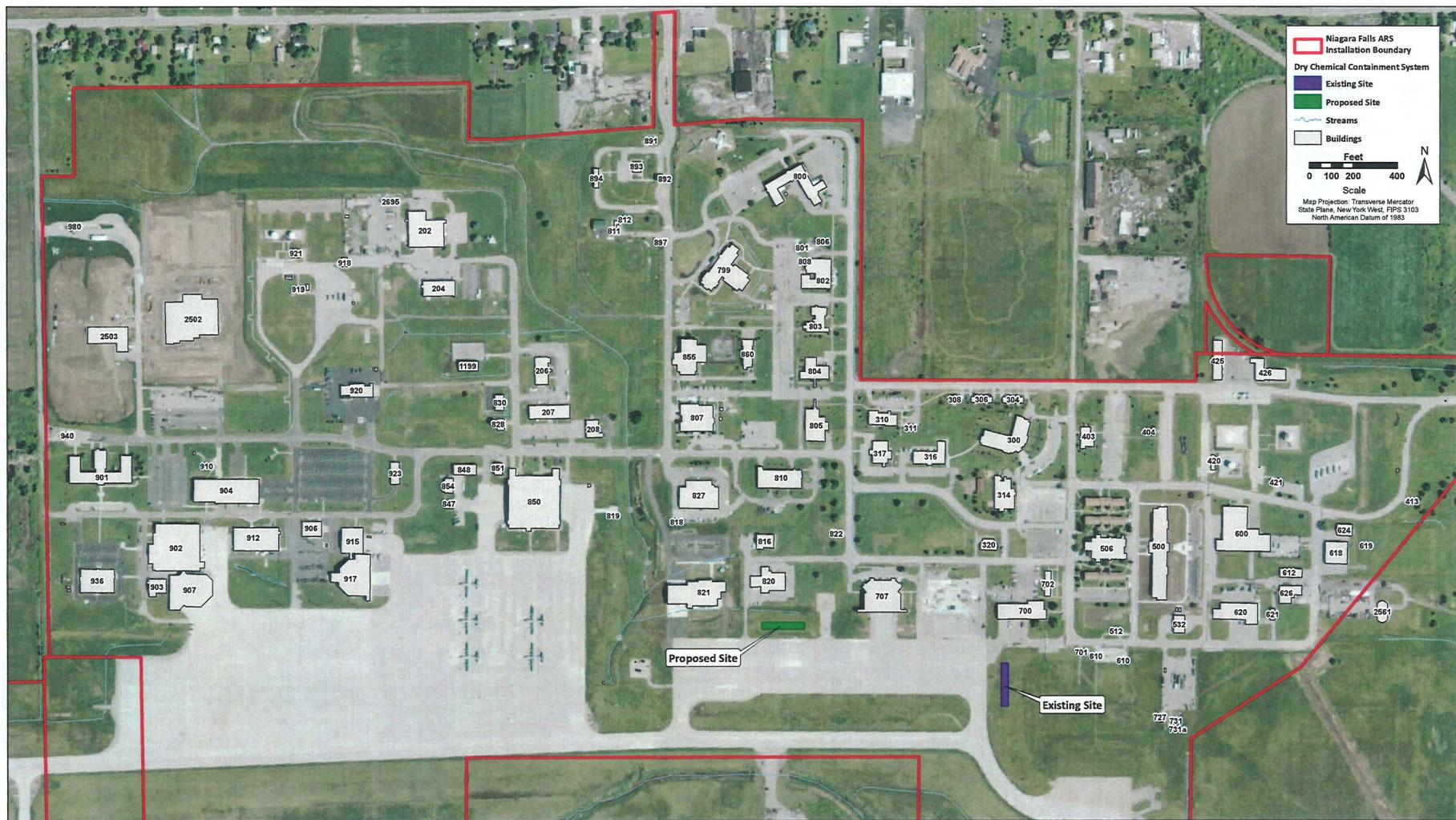
Under the No Action Alternative, the Proposed Action would not be implemented and there would be no change from existing herbicide applications and the location of dry chemical testing at the installation. Broadleaf weeds would continue to be rampant in improved areas, as the current rate of herbicide application is inadequate. Ubiquitous weed growth in improved and other areas on the installation would decrease the aesthetic value, and could cause safety issues in areas where driver visibility would be impacted. Dry chemical testing would not be conducted adjacent to the new Fire Station. Fire personnel would continue to conduct the annual testing to the south of Building 700, and a NOTAM would continue to be required. The No Action Alternative would not address USAF mission concerns at Niagara Falls ARS.

2.4 Alternatives

As part of the NEPA process, reasonable alternatives to the Proposed Action must be considered. The development of reasonable alternatives involved discussions with Niagara Falls ARS installation personnel to identify the purpose of and need for the Proposed Action, alternative courses of action, designs, locations, and management practices for achieving the purpose and need. Consistent with the intent of NEPA, this screening process focused on identifying a range of reasonable operations-specific alternatives and, from that, developing a proposed action that could be implemented in the foreseeable future.

Herbicide Application. The proposed herbicide application would be conducted in accordance with the approved IPMP. The IPMP emphasizes the importance of the Integrated Pest Management philosophy, strategies, and techniques to manage vectors and pests (the term pest is used in the IPMP to describe such pests as insects and rodents, and weedy or undesirable plant species), while reducing pesticide risk and preventing pollution. The IPMP provides actions and guidelines to ensure that nonchemical control efforts will be used to the maximum extent possible before pesticides and herbicides are used.

The overall strategy for the treatment of weeds is to use staged levels of response to control the weed growth, always using the minimum response necessary. Weed control is necessary for overall aesthetics, safety (weeds can interfere with visibility for road users and obscure traffic signs), and structural integrity (weed growth can destroy paving surfaces, cause uneven slabs and broken tarmac, and crack walls, increasing maintenance costs).



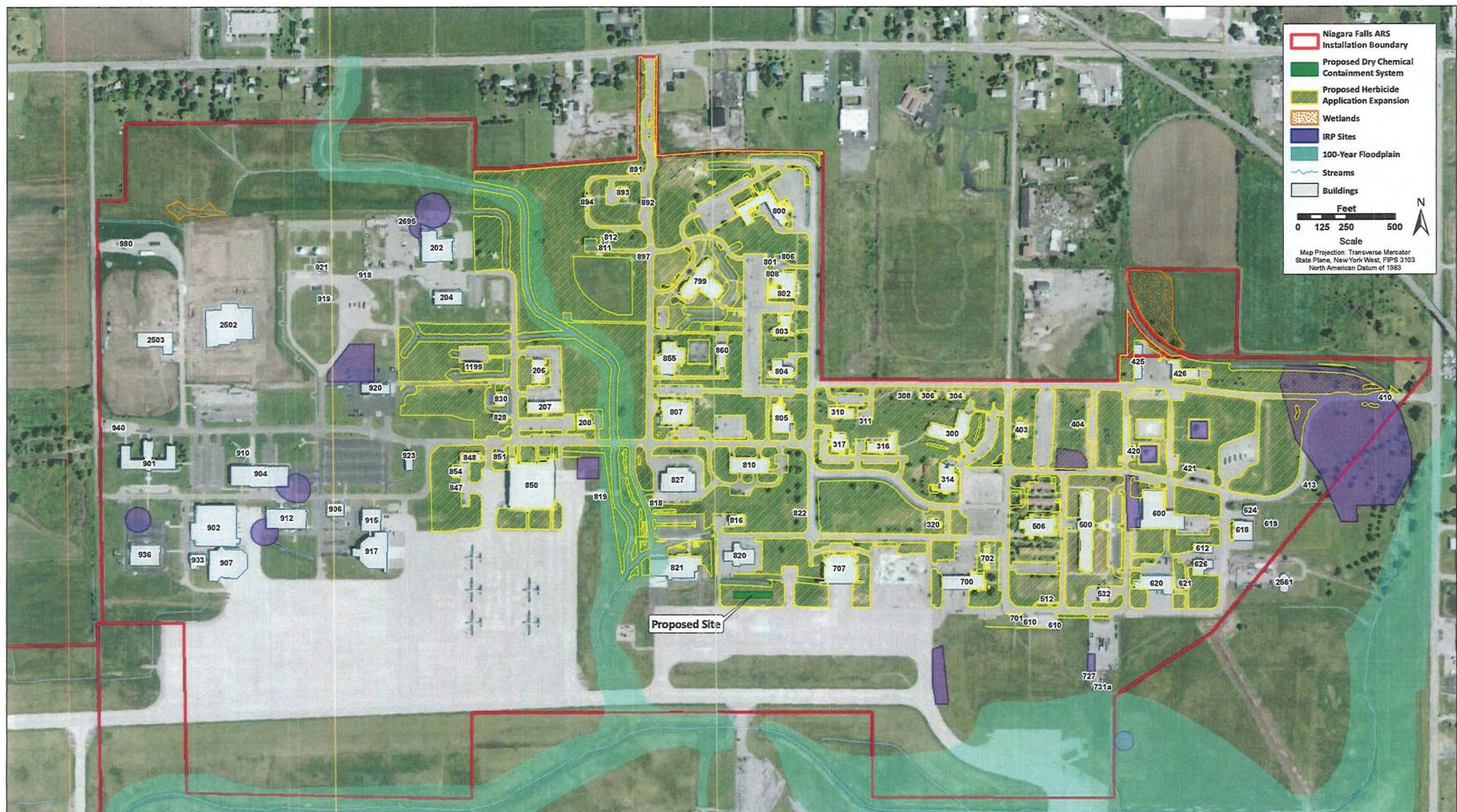


Figure 2-6. Environmental Constraints Associated with the Proposed Action

Physical or cultural control measures are emphasized as the preferred methods and are applied first and then evaluated for effectiveness before the application of herbicides occurs. Chemicals are only used if necessary and are always minimally applied, as required, to control the weeds. The BOS contractor cannot mow closer than about 6 inches from the fenceline or on railroad tracks or runways, and physical means of broadleaf weed control on mowed areas are not feasible. For the Proposed Action, nonchemical control (manually pulling weeds) was deemed infeasible because the area needing weed control is quite large (91.06 acres) and substantial labor hours would be required. Therefore, no additional alternatives to the proposed herbicide application were identified for further detailed analysis in this EA.

Dry Chemical Testing. An alternative to the Proposed Action would (1) establish a process for the Fire Department to test its equipment and collect the spent dry chemical, and (2) establish a location on the Niagara Falls ARS for the Fire Department to conduct the testing. No other processes or methods to test the Fire Department's equipment and collect the spent dry chemical were identified as being feasible. The FAA's Environment, Energy, and Employee Safety Division was contacted to identify procedures recommended by the FAA for dry chemical testing and procedures used by other airports. The FAA requires fire departments to follow equipment manufacturer's recommendations for testing (McMillan 2004). The FAA has no requirement to collect spent Purple-K following equipment testing, and could not offer any recommendations for U.S. airports that use a containment system to collect spent Purple-K following equipment testing (Gilam 2004). Therefore, no other collection system was identified as a practical alternative to the Proposed Action. The Fire Department had proposed to conduct the testing in the fire training area. However, due to the proximity of wetlands, that site was deemed not to be viable. No other locations on the installation other than the preferred location were identified that would provide a comparable level of command and control of dry chemical testing.

2.4.1 Preferred Alternative

Implementation of the Proposed Action, as identified in **Section 2.2**, is the Preferred Alternative.

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3. Affected Environment

This section presents a characterization of the affected environment and an analysis of the potential direct and indirect effects each alternative would have on the affected environment. Cumulative and other effects are discussed in **Section 5**. All potentially relevant resource areas were initially considered in this EA. Some were eliminated from detailed examination because of their inapplicability to this proposal.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, the following evaluation of environmental impacts focuses on those resources and conditions potentially subject to effects and on potentially significant environmental issues deserving of study, and deemphasizes insignificant issues. The following provides the basis for such exclusions.

Noise. The Proposed Action does not include any noise-related activities that could impact the ambient noise environment, such as construction, demolition, or ground-disturbing activities. The proposed site of the dry chemical containment system is in the interior of the installation, more than 3,500 feet from the closest off-installation noise-sensitive receptor (residences to the east of Walmore Road). Therefore, the approximate 1-minute activation of the fire department equipment would not be expected to be noticeable by populations outside the installation boundary. Consequently, this EA will not provide a detailed examination of noise.

Geological Resources. The Proposed Action would not require ground-disturbing activities within Niagara Falls ARS property. Therefore, there would not be any other impacts on geological resources. The discussion of soils is included with water resources (see **Section 3.5**). Accordingly, a detailed examination of geological resources in this EA is not necessary.

Cultural Resources. Cultural resources include archaeological resources, historic architectural or engineering resources, and other traditional resources. Sections 106 and 110 of the National Historic Preservation Act protect cultural resources that are listed or eligible for listing in the National Register of Historic Places. As required by the Department of Defense (DOD), Niagara Falls ARS has an Integrated Cultural Resources Management Plan (ICRMP) that outlines compliance with the applicable laws and other legal requirements (Niagara Falls ARS 2007).

An installationwide Stage 1 archaeological survey was conducted in 1998. After reviewing the survey report, on 12 May 2000 the New York SHPO concluded that there are no archaeological sites at Niagara Falls ARS. The SHPO also stated that future projects at Niagara Falls ARS will not require any further archaeological investigations (NYSHPO 2000). Niagara Falls ARS's standard operating procedures for unanticipated discoveries provided in the ICRMP would be followed should any unanticipated cultural resources, including archaeological sites, be encountered during herbicide application or dry chemical testing (Niagara Falls ARS 2007).

Infrastructure. The Proposed Action would not be located in any utility corridors, or significantly increase utility systems loading. Therefore, the Proposed Action would not be expected to negatively impact utilities or similar infrastructure. Accordingly, a detailed examination of infrastructure in this EA is not necessary.

Socioeconomic Resources and Environmental Justice. The Proposed Action does not involve any activities that would contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Niagara Falls ARS; therefore, there would be no changes in area population or associated changes in demand for housing and services. The proposed construction and demolition projects are relatively small and would not affect local employment rates. Accordingly, a detailed examination of socioeconomics in this EA is not necessary.

The Proposed Action does not involve any activities that would affect residences around the installation or contribute to changes in low-income or minority populations. Accordingly, a detailed examination of environmental justice in this EA is not necessary.

3.1 Air Quality

3.1.1 Definition of the Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin,” and the prevailing meteorological conditions.

Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O_3) - measured as either volatile organic compounds (VOCs) or total nitrogen oxide (NO_x), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur oxides (SO_x), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of New York has adopted the NAAQS and promulgated additional State Ambient Air Quality Standards (SAAQS) for criteria pollutants (New York Code of Rules and Regulations [NYCRR] Title 6, Subpart 257). **Table 3-1** presents the USEPA NAAQS and SAAQS.

The USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. USEPA has delegated the authority for ensuring compliance with the NAAQS to the NYSDEC. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to bring the state into compliance with all NAAQS.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to regionally significant actions in nonattainment or maintenance areas.

On 22 September 2009, the USEPA issued a final rule for mandatory greenhouse gas (GHG) reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on carbon dioxide (CO_2) and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO_2 equivalent per year. The first emissions report is due in 2011 for 2010 emissions. Although GHGs are not currently regulated under the CAA, the USEPA has clearly indicated that GHG emissions and climate change are issues that need to be considered in future planning. GHGs are produced by the burning of fossil fuels and through industrial and biological processes.

Table 3-1. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standard		Secondary Standard
		Federal	State	
CO	8-hour ⁽¹⁾	9 ppm (10 mg/m ³)	Same	None
	1-hour ⁽¹⁾	35 ppm (40 mg/m ³)	Same	None
Pb	Quarterly average	1.5 µg/m ³	Same	Same as Primary
	Rolling 3-Month Average	0.15 µg/m ³ ⁽²⁾	--	Same as Primary
NO ₂	Annual Arithmetic Mean	53 ppb ⁽³⁾	50 ppb	Same as Primary
	1-hour	100 ppb ⁽⁴⁾	--	None
PM ₁₀	Annual Arithmetic Mean	--	--	Same as Primary
	24-hour ⁽⁵⁾	150 µg/m ³	--	Same as Primary
PM _{2.5}	Annual Arithmetic Mean ⁽⁶⁾	15 µg/m ³	--	Same as Primary
	24-hour ⁽⁷⁾	35 µg/m ³	--	Same as Primary
O ₃	8-hour ⁽⁸⁾	0.075 ppm (2008 Standard)	Same	Same as Primary
	8-hour ⁽⁹⁾	0.08 ppm (1997 Standard)	Same	Same as Primary
	1-hour ⁽¹⁰⁾	0.12 ppm	--	Same as Primary
SO ₂	Annual Arithmetic Mean	0.03 ppm	Same	0.5 ppm (3-hour) ⁽¹⁾
	24-hour ⁽¹⁾	0.14 ppm	Same	0.5 ppm (3-hour) ⁽¹⁾
	1-hour	75 ppb ⁽¹¹⁾	Same	None

Sources: USEPA 2010a, NYSDEC 2010a

Notes: Parenthetical values are approximate equivalent concentrations.

- a. Not to be exceeded more than once per year.
- Final rule signed 15 October 2008.
- The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
- To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective 22 January 2010).
- Not to be exceeded more than once per year on average over 3 years.
- To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.
- To attain this standard, the 3-year average of the weighted annual of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³ (effective 17 December 2006).
- To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective 27 May 2008).
- a. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
b. The 1997 standard – and the implementation rules for that standard – will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
c. USEPA is in the process of reconsidering these standards (set in March 2008).
- a. USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard (anti-backsliding).
b. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.
- Final rule signed on 2 June 2010. To attain this standard, the 3-year average of the 99th percentile of daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Key: ppm = parts per million; ppb = parts per billion; mg/m³ = milligrams per cubic meter; µg/m³ = micrograms per cubic meter

EO 13514 *Federal Leadership in Environmental, Energy, and Economic Performance*, was signed in October 2009 and requires agencies to set goals for reducing GHG emissions. One requirement within EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to identify, among other things, “agency activities, policies, plans, procedures, and practices” and “specific agency goals, a schedule, milestones, and approaches for achieving results, and quantifiable metrics” relevant to the implementation of EO 13514. Detailed agency implementation plans for EO 13514 were due in June 2010, when each Federal agency was to deliver an SSPP to the CEQ and the Office of Management and Budget. These implementation plans describe the specific actions agencies will take to achieve their individual GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. The DOD *Strategic Sustainability Performance Plan* was made public on 26 August 2010, and is available at <http://www.whitehouse.gov/administration/eop/ceq/sustainability/plans>. DOD guidance on analyzing and reporting GHGs has not yet been made public. The first air quality emissions report is due in 2011 for 2010 emissions. Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A major stationary source is a facility (i.e., plant, installation, or activity) that has the potential to emit more than 100 tons per year (tpy) of any one criteria air pollutant, 10 tpy of a hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs.

Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A major stationary source is a facility (i.e., plant, installation, or activity) that has the potential to emit more than 100 tpy of any one criteria air pollutant, 10 tpy of a HAP, or 25 tpy of any combination of HAPs.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be “significant” if (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 $\mu\text{g}/\text{m}^3$ or more [40 CFR 52.21(b)(23)(iii)]. PSD regulations also define ambient air increments, limiting the allowable increases to any area’s baseline air contaminant concentrations, based on the area’s designation as Class I, II, or III [40 CFR 52.21(c)]. According to 40 CFR Part 81, no Class I areas are in the vicinity of the Proposed Action. Therefore, Federal PSD regulations would not apply, and are not discussed further in this EA.

3.1.2 Affected Environment

The Proposed Action would occur in Niagara County, which is part of the Niagara Frontier Intrastate 162 AQCR (NFIAQCR) (40 CFR 81.24). The NFIAQCR is classified as in Subpart 1 basic nonattainment for 8-hour O₃ and in attainment for all other criteria pollutants (USEPA 2010c). The most recent emissions inventories for Niagara County and the NFIAQCR are shown in **Table 3-2**. Niagara County is considered the local area of influence, and the NFIAQCR is considered the regional area of influence for the air quality analysis.

Table 3-2. Local and Regional Air Emissions Inventory for 2007

Air Quality Area of Influence	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
Niagara County, New York	16,681	14,290	58,117	7,676	9,099	2,140
NFIAQCR 162	55,425	60,307	321,103	58,441	32,324	7,765

Source: USEPA 2010d

Niagara Falls ARS is registered as a minor source of air emissions with the NYSDEC-based definitions and requirements listed under NYCRR Part 201-3.3, *Trivial Air Activities*. There are various stationary combustion sources on the installation that have the potential to emit criteria pollutants and HAPs, including the installation's boilers and generators. VOCs are emitted primarily from handling of organic liquids (i.e., refueling activities). Miscellaneous particulate matter sources at Niagara Falls ARS include dust collectors, abrasive blasting units, and woodworking equipment. Other stationary sources at Niagara Falls ARS include paint booths, degreasers, solvent cleaners, aircraft fuel cell maintenance, aircraft engine test cell, and wash racks. There is no permitted stationary equipment on Niagara Falls ARS. Mobile sources include aircraft operations, government-owned vehicles, privately owned vehicles, aerospace ground equipment, and other sources not included in the state's stationary source permitting program (Niagara Falls ARS 2010a).

Niagara Falls ARS is required to prepare and retain emissions inventories for NYSDEC. The purpose of these emissions inventories is to estimate and document air pollutant emissions from stationary and mobile sources. Emissions inventories are retained at Base Civil Engineering in Building 403. **Table 3-3** summarizes the 2009 annual air emissions from stationary and mobile sources and major source thresholds.

Table 3-3. Reported Air Emissions and Potential to Emit Values for Niagara Falls ARS

Air Emissions	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	HAP (tpy)
2009 Actual Emissions	3.57	1.82	3.04	0.03	0.28	0.27	0.91
Potential to Emit Values	42.87	5.45	57.08	2.12	10.35	10.30	Not reported
Major Source Threshold	100	50	100	100	100	100	25

Source: Niagara Falls ARS 2010a

3.2 Land Use

3.2.1 Definition of the Resource

The term "land use" refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. There is, however, no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, "labels," and definitions vary among jurisdictions.

Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans/management plans and zoning regulations. According to AFI 32-7062, *Air Force Comprehensive Planning*, the site planning process must address potential noise impacts and consider the location of buildings. In appropriate cases, the locations and extent of proposed actions need to be evaluated for their potential effects on project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations.

Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its “permanence.”

3.2.2 Affected Environment

The on- and off-installation land use information provided in the following paragraphs was obtained from the Niagara Falls ARS General Plan (Niagara Falls ARS 1998a).

The Niagara Falls ARS General Plan identifies nine land use categories: administrative, aircraft operations and maintenance, airfield, community, lodging, industrial, medical, open space, and outdoor recreation. There are three main land use types within the installation boundary: administrative, industrial, and aircraft operations and maintenance. The central portion of the installation is primarily composed of administrative land use areas. Two large parcels of industrial land use areas are in the western and eastern portions of the installation. These areas are surrounded by intermixed open space, community, and recreational land use types.

The Niagara Falls ARS land use plan emphasizes the consolidation of similar activities and the promotion of positive functional relationships between land uses. As older facilities are demolished, new buildings should be sited according to the plan. This effort is intended to result in the consolidation of aircraft operations and maintenance functions adjacent to the airfield. See **Figure 3-1** for existing land use at Niagara Falls ARS.

Most of the changes to the installation’s development pattern involve the consolidation of pockets of similar land use types to form larger land use areas yielding greater future development potential. Emphasis is also placed on preserving the 100-year floodplain and wetland areas by designating these sites as either open space or outdoor recreation areas. The key to successfully developing Niagara Falls ARS would be the identification and consolidation of compatible activities and the continued use of land use areas as opposed to individually sited facilities.

Niagara Falls ARS is a compact installation bounded by Tuscarora Road to the west, Lockport Road to the north, Walmore Road to the east, and Niagara Falls IAP to the south. The dominant feature on the southern side of the installation is the airfield, consisting of permanent and temporary aircraft parking aprons, apron access taxiways, and the Niagara Falls IAP property. Immediately adjacent to the airfield is a consolidated area devoted to aircraft operations and maintenance. Within this area are key operational facilities, including the fuels systems maintenance hangar, aircraft maintenance hangar, and aircraft maintenance shop, which are served by the hangar access apron. An isolated operational area surrounds the engine test stand.

Immediately to the south of the installation is the main taxiway used by AFRC aircraft accessing Niagara Falls IAP. Further south are Niagara Falls IAP’s general aviation and passenger terminals and hangars, and the remainder of the airport’s runways and taxiways. The presence of these facilities effectively precludes the installation from constructing any facilities south of this point. To the north, west, and east are areas of rural to low-density residential and industrial land uses.

The Niagara County Legislature developed the Niagara Communities Comprehensive Plan 2030 as a result of an award from the New York State Qualities Communities Grant program. This initiative assisted the communities of Niagara County in developing the first comprehensive plan dedicated exclusively to Niagara County. The plan was completed in July 2009 and addresses land use and environment; economic development; county services, facilities, and infrastructure; education; and public health and safety. The Comprehensive Plan identifies the Niagara Falls ARS/Niagara Falls IAP area as Community Services and No Information land uses (Niagara County 2009).

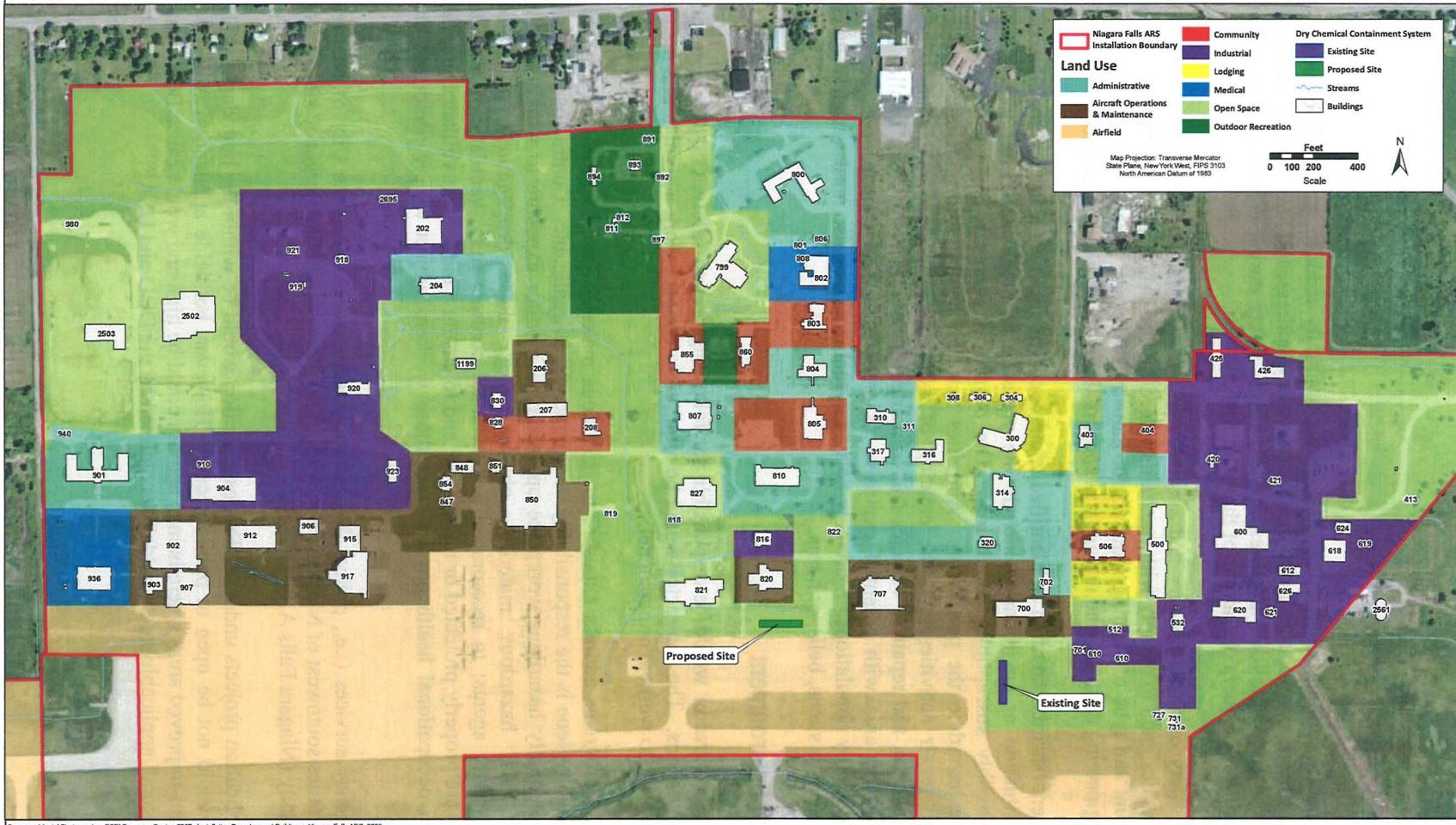


Figure 3-1. Existing Land Use at Niagara Falls ARS

3.3 Safety

3.3.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human safety addresses (1) workers' health and safety during construction and demolition activities, and (2) public safety during construction and demolition activities and during subsequent operations of those facilities.

The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and USAF regulations designed to comply with standards issued by OSHA and the USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors.

Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of extremely noisy environments. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

3.3.2 Affected Environment

Safety. The BOS contractor would be responsible for following ground safety, OSHA regulations, and MSDS recommendations. The contractor would be required to conduct work activities in a manner that does not pose any risk to workers or personnel.

Industrial hygiene programs address exposure to hazardous materials, use of PPE, and availability of MSDSs. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operation; to monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous material), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; to recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

There are emergency services (i.e., police, fire, and ambulance services) in the City of Niagara Falls approximately 5 miles southwest of Niagara Falls ARS. Therefore, potential emergency situations can be responded to quickly (Niagara Falls ARS 1998a).

All chemical application projects under the Proposed Action would be within the boundaries of Niagara Falls ARS and would not be open to public access. However, herbicide application would occur in improved and semi-improved areas where human activity could be high and would cause BOS contractors to strictly adhere to all applicable safety guidelines outlined by the DOD and USAF.

3.4 Water and Soil Resources

3.4.1 Definition of the Resource

3.4.1.1 Water Resources

Hydrology consists of the redistribution of water through the processes of evapotranspiration, surface runoff, and subsurface flow. Hydrology results primarily from (1) temperature and total precipitation that determine evapotranspiration rates, (2) topography that determines rate and direction of surface flow, and (3) soil and geologic properties that determine rate of subsurface flow and recharge to the groundwater reservoir.

Groundwater consists of subsurface hydrologic resources. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations. Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale.

Waters of the United States are defined within the Clean Water Act (CWA), as amended, and jurisdiction is addressed by the USEPA and the U.S. Army Corps of Engineers (USACE). These agencies assert jurisdiction over (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-around or have continuous flow at least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries. Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill into waters of the United States including wetlands. Encroachment into waters of the United States and wetlands requires a permit from the state and the Federal government. An encroachment into wetlands or other “waters of the United States” resulting in displacement or movement of soil or fill materials has the potential to be viewed as a violation of the CWA if an appropriate permit has not been issued by the USACE. In New York, the USACE has primary jurisdictional authority to regulate wetlands and waters of the United States.

A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards, established by the CWA, occur. The CWA requires that states establish a Section 303(d) list to identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the sources causing the impairment. A TMDL is the maximum amount of a substance that can be assimilated by a water body without causing impairment.

Niagara Falls ARS complies with storm water runoff regulations adopted by New York State. The *New York State Stormwater Management Design Manual* (NYSDEC 2010b) provides a general overview on how to size, design, select, and locate storm water management practices at a development site to comply with state storm water performance standards. State storm water regulations are more stringent than Federal regulations because up to 24 hours of detention for runoff generated from a 1-year, 24-hour storm event is required. The purpose of this regulation is that runoff would be stored and released in such a gradual manner that critical erosive velocities would seldom be exceeded in downstream channels. This regulation protects receiving water bodies from smaller storm events than are required to be analyzed under Federal regulations. In addition, pre- and post-development hydrology must remain equal. Coverage under a State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity must be obtained prior to any construction activity commencing that would disturb one or more acres of soil.

In addition, wetlands are protected under EO 11990, *Protection of Wetlands*, the purpose of which is to reduce adverse impacts associated with the destruction or modification of wetlands. This order directs Federal agencies to provide leadership in minimizing the destruction, loss, or degradation of wetlands. In furtherance of NEPA, agencies shall avoid undertaking or assisting in new construction in wetlands unless there is no practical alternative. Each agency will provide opportunity for early public review of plans and proposals for construction in wetlands, including those whose impact is not significant to require EIS preparation. The Deputy Assistant Secretary of the Air Force - Environment, Safety, and Occupational Health or another designated official must sign a FONPA before any action within a Federal wetland may proceed as specified in Secretary of the Air Force Order 780.1. The recently revised AFI 32-7064 grants approval authority to the chairperson of the Headquarters AFRC Environmental Protection Committee for wetlands encroachment FONPAs. In preparing a FONPA, the installation must consider the full range of practicable alternatives that will meet justified program requirements, are within the legal authority of the U.S. Army, meet technology standards, are cost-effective, do not result in unreasonable adverse environmental impacts, and other pertinent factors. Once the practicality of alternatives has been fully assessed, only then should a statement regarding the FONPA be made into the associated FONSI or record of decision.

Wetlands are also protected in New York State under Article 24 of the New York Environmental Conservation Law, commonly known as the Freshwater Wetlands Act (the Act or Article 24). Freshwater wetlands, as defined by the Act, are wetland areas 12.4 acres or larger (except under special circumstances). The Act protects the wetland and 100 feet of protective buffer surrounding it.

As a result of the above-mentioned state and Federal regulations, it is the responsibility of the USAF to identify jurisdictional waters of the United States (including wetlands) occurring on USAF installations that have the potential to be impacted by installation activities. Such impacts include construction of roads, buildings, runways, taxiways, navigation aids, and other appurtenant structures; or activities as simple as culvert crossings of small intermittent streams, rip-rap placement in stream channels to curb accelerated erosion, and incidental fill and grading of wet depressions.

Floodplains are areas of low-level ground along rivers, stream channels, or coastal waters. The living and nonliving parts of natural floodplains interact with each other to create dynamic systems in which each component helps to maintain the characteristics of the environment that supports it. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and a diversity of plants and animals. Floodplains provide a broad area to inundate and temporarily store floodwaters. This reduces flood peaks and velocities and the potential for erosion. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body (FEMA 1986).

Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of FEMA Flood Insurance Rate Maps (FIRMs), which contain enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative.

Niagara Falls ARS activities are regulated by the NYSDEC. The Environmental Conservation Law established NYSDEC and authorizes its programs. Under this law, the NYSDEC has developed regulations to protect the state's water bodies, including watershed management, monitoring, and assessment; storm water management, and water quality management planning programs.

3.4.1.2 Soil Resources

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The soil qualities, growing season, and moisture supply are needed for a well-managed soil to produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. The intent of the FPPA is to minimize the extent that Federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses. The Act also ensures that Federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government programs and policies to protect farmland.

The implementing procedures of the FPPA and National Resources Conservation Service (NRCS) require Federal agencies to evaluate the adverse effects (direct and indirect) of their activities on prime and unique farmland, and farmland of statewide and local importance, and to consider alternative actions that could avoid adverse effects. Determination of whether an area is considered prime or unique farmland and potential impacts associated with a proposed action is based on preparation of the farmland conversion impact rating form AD-1006 for areas where prime farmland soils occur and by applying criteria established at Section 658.5 of the FPPA (7 CFR 658). The NRCS is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the act (see 7 CFR Part 658, 5 July 1984).

3.4.2 Affected Environment

3.4.2.1 Water Resources

Hydrology. The topography in the vicinity of Niagara Falls ARS is flat, dipping slightly to the south, with extremes in elevation of 578 to 600 feet above mean sea level. The installation is in the Lake Erie-Niagara River Basin. There are about 5,390 miles of rivers and streams and 24 large lakes, ponds, and reservoirs covering 1,098 acres in the basin (NYSDEC 2009).

Groundwater. Aquifers underlying the installation are composed of carbonate rocks, consistent with the geology of the Central Lowland province of New York. Groundwater storage and movement occurs to the east-southeast, primarily through secondary fractures. Groundwater quality is poor due to the presence of dissolved minerals such as calcite, dolomite, gypsum, and halite. Water quality deteriorates with depth in the Lake Erie-Niagara River Basin. No potable water wells are present at Niagara Falls ARS, but groundwater monitoring wells are present throughout the installation (Niagara Falls ARS 2009b, Niagara Falls ARS 2009c). Groundwater is sampled semi-annually as VOCs have been detected in some wells. This is discussed further in **Section 3.8.2**.

Surface Water. The major surface water feature at Niagara Falls ARS is Cayuga Creek. Cayuga Creek enters the installation from the east at the Walmore Road gate and flows west along the southern border of the installation, dividing the Niagara Falls ARS from the Niagara Falls IAP. Cayuga Creek ultimately drains into the Niagara River, upstream of American and Horseshoe Falls. In addition to Cayuga Creek, two artificial tributaries convey storm water off the installation. The primary tributary directing storm water off-installation originates in the northwestern portion of the installation and flows south through the center of Niagara Falls ARS. The secondary tributary flows north to south along the western end of the airfield.

Seven outfalls collect storm water from impervious surfaces. These outfalls are monitored on a quarterly basis by Niagara Falls ARS for water quality. NYSDEC issued a baseline General State Pollutant Discharge Elimination System (SPDES) Permit for Storm Water Discharges Associated with Industrial Activity in June 1993. Niagara Falls ARS was accepted for coverage under this General Permit (SPDES Permit No. NYR00B522) on 30 November 1994. The SPDES general permit (GP-93-05) expired on 1 August 1998, and was extended by NYSDEC as GP-98-03 until 31 October 1998. The permit has been reissued as GP-98-03 for a 5-year period effective 1 November 1998, and is substantially the same as the previous permit. The current permit was administratively extended until a new permit could be issued.

The General Permit has since been renewed and revised so it more closely reflects the USEPA's Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity. This revised General Permit (renumbered as GP-0-06-002) became effective on 27 March 2007 and will expire on 27 March 2012. The General Permit requires quarterly visual inspections of storm water, annual dry weather flow inspections at storm water outfalls, and submittal of an annual certification report form.

NYSDEC also issued a General Permit for Storm Water Discharges Associated with Construction Activities (Permit No. GP-0-10-001, issued 29 January 2010). A Storm Water Pollution Prevention Plan (SWPPP) contains BMPs to minimize the effects of storm water pollution into surface waters. The General Permit for Storm Water Discharges Associated with Construction Activities states that water quality must be maintained, by ensuring there are "no increase in turbidity that will cause a substantial visible contrast to natural conditions...no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and...no residue from oil and floating substances, nor visible oil film, nor globules of grease" (NYSDEC 2010b).

No application of herbicides would be conducted within or adjacent to surface waters. Dry chemical testing would be conducted within approximately 60 feet of a drainage ditch.

Wetlands. Wetlands on the installation were identified following the procedures defined in the 1987 USACE *Wetlands Delineation Manual* (USACE 1987). Delineation of jurisdictional wetlands was based on the occurrence of the following three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. A letter from the USACE Buffalo District states that this delineation is valid for 5 years from October 2003. An updated wetland delineation for Niagara Falls ARS was completed in 2008 and a jurisdictional determination from the USACE was issued on 10 November 2009, as shown in **Appendix D** (USACE 2009).

An emergent marsh/shrub wetland (designated TW-1) covering 72 acres west of the Niagara Falls IAP main runway was delineated in 1992 by NYSDEC. A small portion of TW-1 is on Niagara Falls ARS property. There is a small area of overlap between TW-1 and the jurisdictional wetland mapped as Wetland ABC. Currently, Niagara Falls ARS has a permit (Permit 90-87-0946) from NYSDEC for management of this wetland area and its 100-foot buffer west of Runway 10L-28R. This permit allows the 914 AW to remove emergent trees and brush and to periodically mow approximately 4 acres of the wetland and its 100-foot buffer zone within the installation boundaries (Niagara Falls ARS 2004).

The 2008 delineation of wetlands and other waters of the United States at Niagara Falls ARS identified approximately 38 acres of jurisdictional wetlands or waters of the United States on the installation (USACE 2009). Most of the wetlands are in the southwestern portion of the Niagara Falls ARS and are classified as palustrine scrub-shrub/emergent wetlands. Although impacted by ongoing vegetation maintenance and by historic filling and grading, these wetlands do provide some functions such as alteration of flood flow, storm water retention, and wildlife habitat. The proximity of these separate wetlands to each other and to the TW-1 wetland can also provide refuge and act as a corridor for wildlife, and possibly direct them away from the runways and taxiways.

The wetlands in the northern and northeastern portion of Niagara Falls ARS primarily provide alteration of flood flow and storm water retention. The high level of disturbance (primarily caused by mowing activities) and proximity to buildings and recreational areas reduces the ability of the wetlands to provide good quality wildlife habitat (Niagara Falls ARS 2005b).

No wetlands have been mapped within or adjacent to areas that would be treated with herbicides or the area proposed for dry chemical testing. No application of herbicides would occur within or adjacent to wetlands.

Waters of the United States. As shown in the 10 November 2009 jurisdictional determination from the USACE (see **Appendix D**), the Wetland W tributary is a jurisdictional ephemeral drainage swale associated with an abandoned railroad track. It is a heavily maintained drainage channel constructed to convey storm water runoff along the railroad bed and is bounded on two sides by the raised railroad bed. The Wetland W tributary flows east and southeast to Cayuga Creek. Since the Wetland W tributary is connected to Cayuga Creek, a navigable stream that empties into the Niagara River, it has been classified as a jurisdictional water of the United States by the USACE (see **Appendix D**) (USACE 2009). The Wetland W tributary is approximately 1,293 linear feet and 5 to 6 feet wide.

No other waters of the United States have been identified on Niagara Falls ARS.

Floodplains. Proposed 2008 FEMA FIRMs covering the Niagara Falls ARS, Community Panel No. 36063C0327E show that lands adjacent to Cayuga Creek and its tributaries are within the mapped 100-year floodplain. This includes the area to the west of the runway and through the central portion of the installation. The remainder of the installation composes an area of minimal flooding (FEMA 2008, FEMA undated). Herbicide application could occur within floodplains associated with Cayuga Creek in the central part of the installation. Dry chemical testing relocation would not occur within areas designated as floodplains.

3.4.2.2 Soil Resources

The U.S. Department of Agriculture's NRCS mapped and classified the installation's soils in 2006. Niagara Falls ARS occupies level to gently sloping land areas dominated by two soil mapping units. Primary soil series within these mapping units are the Odessa silty clay loam and the Lakemont silty clay loam. These soils formed in glacial material deposited during and shortly after the Ice Age (the Pleistocene epoch, approximately 1.8 million to 10,000 years ago). The Odessa soil, a moderately fine textured soil, covers a majority of the area to the north of Cayuga Creek. It is somewhat poorly drained, has moderately low permeability, and a seasonal high water table at 6 to 12 inches below ground surface (bgs). The remainder of the installation is underlain by the Lakemont soil series, a moderately coarse and medium-textured soil that is poorly to very poorly drained, with moderately low permeability at the surface and low permeability in the subsoil. The seasonal high water table is at or immediately below ground surface. The capacity of both soils to retain water is high, and the erosion potential is minimal (NRCS 2006). Approximately half of the installation is overlain by pavement and other impermeable surfaces. If drained, the Odessa soil would be considered a prime farmland soil. However, these soils are

not currently drained and would not be drained under the Proposed Action, and therefore, would be not considered prime farmland soils as defined by the FPPA.

3.5 Biological Resources

3.5.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., wetlands, forests, and grasslands) in which they exist. Protected and sensitive biological resources include federally listed (endangered or threatened), proposed, and candidate species, and designated or proposed critical habitat; species protected under other Federal laws (see **Appendix A**); species of concern managed under Conservation Agreements or Management Plans; and state-listed species.

Under the Endangered Species Act (ESA) (16 U.S.C. 1536), an “endangered species” is defined as any species in danger of extinction throughout all or a significant portion of its range. A “threatened species” is defined as any species likely to become an endangered species in the foreseeable future. USFWS also maintains a list of species considered to be candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the Act.

New York State developed a Comprehensive Wildlife Conservation Strategy that focuses on the “species of greatest conservation need.” This includes those species that are deemed rare, imperiled, and those for which status has not been established. The conservation needs of all species on this list will be addressed in New York’s Comprehensive Wildlife Conservation Strategy. Additionally, the list can be used for prioritizing or directing other conservation programs in New York, including habitat protection and management, surveys, and research (NYSDEC 2011). The USFWS recommended in its 2009 Threatened and Endangered Species Inventory at the Niagara Falls ARS that the installation should consider species of greatest conservation need as these species are vulnerable and could likely become threatened or endangered species in the future (Niagara Falls ARS 2009d).

3.5.2 Affected Environment

Vegetation

Niagara Falls ARS lies within the Beech-Maple Forest Section of the Eastern Deciduous Forest Province. This ecoregion is characterized by temperate deciduous forests. Niagara Falls ARS was historically a mixed hardwood forest. The forest was logged during the 1800s and cleared for agricultural uses. Farming and urban development have resulted in very limited forest acreage in the vicinity of the installation (Niagara Falls ARS 1998b). Most of the installation is urbanized and the original vegetation has been removed or significantly altered by development, construction, landscaping, and other disturbances. Consequently, there is very little opportunity for historic native plant communities to occur on Niagara Falls ARS. The vegetative species diversity at Niagara Falls ARS is relatively low (Niagara Falls ARS 1998c) and there have been no observations made of any unique native vegetative species occurring on the installation (Niagara Falls ARS 1998b).

Turf grasses and various broad-leaf weeds are the predominant vegetation type on Niagara Falls ARS. Grass varieties consist of common introduced species, including Kentucky bluegrass (*Poa pratensis*), tall fescue (*Festuca arundinacea*), orchardgrass (*Dactylis glomerata*), Italian ryegrass (*Lolium multiflorum*), red top (*Agrostis alba*), creeping red fescue (*Festuca rubra*), colonial bent grass (*Agrostis tenuis*), and timothy (*Phleum pratense*). A variety of shrubs and trees, mostly introduced species, are also present on

Niagara Falls ARS. Shrub species that are common on the installation include blue pfitzer juniper (*Chinesis glauca hetzel*), pyramidal yew (*Taxus caspida capitata*), and spreading yew (*Taxus caspida*). Tree species that are common on the installation include white pine (*Pinus strobus*), Scotch pine (*Pinus sylvestris*), green ash (*Fraxinus lanceolata*), red maple (*Acer rubrum*), and Lombardy poplar (*Populus nigra italicica*) (Niagara Falls ARS 1998b).

Wildlife

Common mammals on Niagara Falls ARS include the meadow vole (*Microtus pennsylvanicus*), coyote (*Canis lutrans*), white-tailed deer (*Odocoileus virginianus*), beaver (*Castor canadensis*), deer mouse (*Peromyscus maniculatus*), eastern cottontail rabbit (*Sylvilagus floridanus*), muskrat (*Ondatra zibethica*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), and woodchuck (*Marmota monax*) (Niagara Falls ARS 2001a).

Sixty native bird species have been identified on Niagara Falls ARS during the 2007 breeding season (May through August) and November 1997 through July 1999 (see **Table 3-4**). Of these species, 29 are either grassland obligates, are common to grassland habitats, or occasionally occur in grassland habitats. Seventeen of these species are either wetland obligates or are common to wetland habitats. Fifteen species are found in woodlands or along forest edges. Three are commonly found near bodies of water. Some species are found within more than one habitat.

The most common bird species at Niagara Falls ARS include the red-winged blackbird (*Agelaius phoeniceus*), song sparrow (*Melospiza melodia*), gulls (*Larus spp.*), eastern meadowlark (*Sturnella magna*), savannah sparrow (*Passerculus sandwichensis*), rock dove (*Columba livia*), mourning dove (*Zenaida asiatica*), killdeer (*Charadrius vociferous*), American crow (*Corvus brachyrhynchos*), and great blue heron (*Ardea herodias*). Common species on the installation during winter months include the mallard (*Anas platyrhynchos*), American black duck (*A. rubripes*), Canada goose (*Branta canadensis*), and great blue heron. Cayuga Creek provides winter habitat for these species (Niagara Falls ARS 2001a).

Six species of reptiles and amphibians were observed during surveys conducted by the USFWS from 1997 to 1999, including the snapping turtle (*Chelydras serpentina*), midland painted turtle (*Chrysemys picta marginata*), eastern garter snake (*Thamophis sirtalis*), northern leopard frog (*Rana pipiens*), wood frog (*Rana sylvatica*), and eastern box turtle (*Terrapene carolina carolina*).

Wood frogs and northern leopard frogs generally occur in the southwestern portion of the property in the wetland area and along edges of Cayuga Creek and ditches. Snapping turtles and painted turtles were commonly seen in areas throughout Cayuga Creek and the ditches. The eastern garter snake is commonly found in the grassland areas and along drainage ditches. One unconfirmed sighting of an eastern box turtle was made in 1998 beside Cayuga Creek (Niagara Falls ARS 2001a). No reptile or amphibian species were found in sampling sites within Cayuga Creek during May, July, and August 2007 or September 2008 USFWS surveys (Niagara Falls ARS 2009d).

Grassland communities are the predominant habitat type on the installation. NYSDEC has indicated that the installation's grassland habitat has regional importance for supporting a variety of grassland bird species (Niagara Falls ARS 1998b). The semi-improved grassy areas adjacent to taxiways are a vast area of grassland that attract many bird species including several New York State threatened, endangered, and special concern grassland species. Wetland communities, although limited, are another habitat type on the installation, and are the preferred habitat for the majority of the freshwater wading bird populations in western New York (Niagara Falls ARS 1998b).

Preliminary information gathered suggests that the majority of the habitat present on Niagara Falls ARS has a moderate value in relation to its ability to support the maximum native species richness of birds,

mammals, reptiles, and amphibians; however, USFWS and NYSDEC recognize that fish and wildlife opportunities at Niagara Falls ARS are limited because the installation is relatively small, confined, and

Table 3-4. Native Bird Species Observed at Niagara Falls ARS during 2007 Breeding Season (May through August) and November 1997 to July 1999

Common Name	Scientific Name
American bittern ¹	<i>Botaurus lentiginosus</i>
American black duck ¹	<i>Anas rubripes</i>
American coot ¹	<i>Fulica Americana</i>
American crow	<i>Corvus brachyrhynchos</i>
American goldfinch ²	<i>Carduelis tristis</i>
American kestrel ²	<i>Falco sparverius</i>
American robin ²	<i>Turdus migratorius</i>
American tree sparrow ^{1,2}	<i>Spizella arborea</i>
American woodcock ¹	<i>Scolopax minor</i>
Baltimore oriole	<i>Icterus galbula</i>
Bank swallow ^{1,2}	<i>Riparia riparia</i>
Barn swallow ²	<i>Hirundo rustica</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Black-capped chickadee	<i>Poecile atricapilla</i>
Black-crowned night-heron ¹	<i>Nycticorax nycticorax</i>
Blue jay	<i>Cyanocitta cristata</i>
Bobolink ²	<i>Dolichonyx oryzivorus</i>
Canada goose ^{1,2}	<i>Branta Canadensis</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Chipping sparrow ²	<i>Spizella passerine</i>
Common grackle ²	<i>Quiscalus quiscula</i>
Common yellowthroat ^{1,2}	<i>Geothlypis trichas</i>
Eastern kingbird ²	<i>Tyrannus tyrannus</i>
Eastern meadowlark ²	<i>Sturnella magna</i>
Eastern phoebe	<i>Sayornis phoebe</i>
Eastern towhee	<i>Pipilo erythrorththalmus</i>
Field sparrow ²	<i>Spizella pusilla</i>
Grasshopper sparrow ²	<i>Ammodramus savannarum</i>
Gray catbird	<i>Dumetella carolinensis</i>
Great blue heron ¹	<i>Ardea Herodias</i>
Great egret ¹	<i>Ardea alba</i>
Green heron ¹	<i>Butorides virescens</i>
Horned lark ²	<i>Eremophila alpestris</i>
House wren	<i>Troglodytes aedon</i>
Killdeer ²	<i>Charadrius vociferus</i>
Mallard ¹	<i>Anas platyrhynchos</i>
Mourning dove ²	<i>Zenaida macroura</i>

Common Name	Scientific Name
Northern cardinal	<i>Cardinalis cardinalis</i>
Northern flicker	<i>Colaptes auratus</i>
Northern harrier ²	<i>Circus cyaneus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Osprey	<i>Pandion haliaetus</i>
Purple finch	<i>Carpodacus purpureus</i>
Red-tailed hawk ²	<i>Buteo jamaicensis</i>
Red-winged blackbird ^{1,2}	<i>Agelaius phoeniceus</i>
Ring-billed gull	<i>Larus delawarensis</i>
Ring-necked pheasant ²	<i>Phasianus colchicus</i>
Savannah sparrow ²	<i>Passerculus sandwichensis</i>
Short-eared owl ²	<i>Asio flammeus</i>
Song sparrow ²	<i>Melospiza melodia</i>
Snowy owl ²	<i>Nyctea scandiaca</i>
Spotted sandpiper ¹	<i>Actitis macularia</i>
Tree swallow ^{1,2}	<i>Tachycineta bicolor</i>
Upland sandpiper ²	<i>Bartramia longicauda</i>
White-throated sparrow	<i>Zonotrichia albicollis</i>
Warbling vireo	<i>Vireo gilvus</i>
Willow flycatcher ²	<i>Empidonax traillii</i>
Wood thrush	<i>Hylocichla mustelina</i>
Yellow warbler ¹	<i>Dendroica petechia</i>

Sources: Niagara Falls ARS 2001a, Niagara Falls ARS 2009d

Notes:

1. Species is an obligate wetland species or is commonly observed in wetland habitats.
2. Species is an obligate grassland species or is commonly observed in grassland habitats.
3. Species commonly found in woodlands or along forest edges.
4. Species commonly found near bodies of water.

situated in an industrial and agricultural area. The potential fish habitat on Niagara Falls ARS consists of Cayuga Creek and its unnamed tributaries. Intermittent flow and limited aquatic habitat attribute to the relatively low value of these waterways in relation to their regional ability to support aquatic species (Niagara Falls ARS 1998b).

Protected and Sensitive Species

In 1997, 1998, 2001, and 2007, the USFWS-Lower Great Lakes Fishery Resources Office (LGLFRO) conducted surveys for federally and state-listed endangered, threatened, and special concern species, and inventories of the natural communities and habitats on Niagara Falls ARS (Niagara Falls ARS 1998c, Niagara Falls ARS 2001a, Niagara Falls ARS 2009d). Additional surveys were also conducted by USFWS-LGLFRO in 2001, 2006, and 2008 (Niagara Falls ARS 2009d). No federally threatened or endangered species have been observed on Niagara Falls ARS. Seven New York State-listed bird species have been observed on the installation, including the upland sandpiper (*Bartramia longicauda*), short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*), grasshopper sparrow (*Ammodramus savannarum*), American bittern (*Botaurus lentiginosus*), least bittern (*Ixobrychus exilis*), and horned lark (*Eremophila alpestris*). Due to habitat types on the installation and historic ranges of several species,

additional federally and state-listed threatened and endangered species and species of concern have potential to occur on Niagara Falls ARS. USFWS is unable to confirm the presence of the eastern prairie fringed orchid (*Platanthera leucophea*) on the installation; however, historical information indicates that the species previously inhabited the area (Niagara Falls ARS 2009b). The eastern prairie fringed orchid was not found in sampling sites during May, August, and September 1998 USFWS vegetation surveys (Niagara Falls ARS 1998c). Based on bat surveys conducted in 2007, USFWS-LGLFRO determined that, due to the lack of summer roosting habitat and the lack of major food orders, bats in general do not use Niagara Falls ARS. The resources that bats require to survive are not provided at the installation, especially the specific resource requirements needed for the Indiana bat (*Myotis sodalis*) and eastern small-footed myotis (*M. leibii*) (Niagara Falls ARS 2009d).

Threatened and endangered species identified as currently occurring, historically occurring, or potentially occurring on Niagara Falls ARS are shown in **Table 3-5**. These species are identified by one of the following categories: occurs, migrates through, or historic range. The term “occurs” refers to a species inhabiting the installation on a continuing basis. The term “migrates through” refers to a species inhabiting the installation on an indiscriminate basis. The term “historic range” is used when Federal or state agencies are unable to confirm the presence of a species on the installation due to insufficient data, but where historical information indicates that the species previously inhabited or migrated through the area.

Grasshopper sparrow. The grasshopper sparrow, state-listed as a species of special concern, prefers grasslands with low to moderate grass heights. The Niagara Falls ARS has extensive grassland fields where grasshopper sparrows might nest. Surveys for the USFWS inventory observed grasshopper sparrows on several survey plots near the runway. The USFWS inventory report concluded that repeated sightings during the breeding season suggest breeding activity on the Niagara Falls ARS and that the grassland areas on the installation provide quality habitat for this species (Niagara Falls ARS 2001a).

Northern harrier. The northern harrier is state-listed as threatened and was observed regularly at Niagara Falls ARS foraging low over many of the fields. The northern harrier is an open country species that breeds in moderate to tall grasslands with dense vegetation and abundant residual vegetation (Niagara Falls ARS 2005b). It is also associated with wetlands (e.g., freshwater and saltwater marshes, swamps and bogs, wet meadows), hay meadows, cultivated and noncultivated farmland, and shrub-steppe habitats (Niagara Falls ARS 1999a). The northern harrier generally uses grassland dominated by thick vegetation and wetlands for nesting (Niagara Falls ARS 2005b). Nests are difficult to locate as these raptors nest on elevated ground concealed by vegetation. It is unlikely that the northern harrier nested in areas that were considered semi-improved where mowing periodically occurs at the installation (Niagara Falls ARS 2009d). Nesting proximal to the installation has been confirmed by the NYSDEC Breeding Bird Atlas (NYSDEC 2007).

The northern harrier was identified on Niagara Falls ARS in November 1997 and in May 1998, both occurrences in open grassland near the runway. The 2001 USFWS inventory report concluded that the northern harrier uses the Niagara Falls ARS for foraging; however, no nesting on site was confirmed (Niagara Falls ARS 2001a). The installation’s habitat was described as consistent with northern harrier preferred habitat, including areas along the runways in the southern half of the installation. The area intended for herbicide application is not included in the eligible habitat areas described by USFWS (Niagara Falls ARS 1999a).

Short-eared owl. The short-eared owl is state-listed as endangered. The short-eared owl is most often found in inland or coastal marshes, meadows, old fields, pastures, and airports. Breeding habitats include moorlands, marshlands, bogs, and forested areas that have been cleared. The species prefers open habitat with substantial areas for suitable resting and nesting cover. Additional habitat requirements include nearby areas with high productivity of small mammals. Upland sites with vegetation (e.g., grasses, sedges, and forbs) less than 0.5 meters high is preferred for nesting. Mean territory size has been found to be approximately 136 acres (Niagara Falls ARS 1999b).

**Table 3-5. Threatened and Endangered Species
Identified or Potentially Occurring on Niagara Falls ARS**

Common Name	Scientific Name	Status		Presence on Niagara Falls ARS
		Federal	State	
Mammals				
Allegheny woodrat	<i>Neotoma floridana</i>	NL	E	Historic range
Indiana bat	<i>Myotis sodalis</i>	E	E	Historic range
Eastern small-footed myotis	<i>Myotis leibii</i>	NL	SC	Historic range
Birds				
American bittern	<i>Botaurus lentiginosus</i>	NL	SC	Occurs
Peregrine falcon	<i>Falco peregrinus</i>	NL	E	Migrates through
Bald eagle ¹	<i>Haliaeetus leucocephalus</i>	D	T	Migrates through
Common nighthawk	<i>Chordeiles minor</i>	NL	SC	Migrates through
Common tern	<i>Sterna hirundo</i>	NL	T	Migrates through
Grasshopper sparrow	<i>Ammodramus savannarum</i>	NL	SC	Occurs
Henslow's sparrow	<i>Ammodramus henslowii</i>	NL	T	Historic range
Horned lark	<i>Eremophila alpestris</i>	NL	SC	Occurs
Least bittern	<i>Ixobrychus exilis</i>	NL	T	Occurs
Loggerhead shrike	<i>Lanius ludovicianus</i>	NL	E	Historic range
Northern harrier	<i>Circus cyaneus</i>	NL	T	Occurs
Osprey	<i>Pandion haliaetus</i>	NL	SC	Migrates through ³
Piping plover ²	<i>Charadrius melanotos</i>	E	E	Migrates through
Red-shouldered hawk	<i>Buteo lineatus</i>	NL	SC	Migrates through
Short-eared owl	<i>Asio flammeus</i>	NL	E	Occurs
Upland sandpiper	<i>Bartramia longicauda</i>	NL	T	Occurs
Vesper sparrow	<i>Pooecetes gramineus</i>	NL	SC	Historic range
Amphibians and Reptiles				
Eastern box turtle	<i>Terrapene carolina</i>	NL	SC	Occurs ⁴
Northern cricket frog	<i>Acris crassipes</i>	NL	E	Historic range
Queen snake	<i>Regina septemvittata</i>	NL	E	Historic range
Plants				
Eastern prairie fringed orchid	<i>Platanthera leucophaea</i>	NL ⁵	SH	Historic range

Sources: Niagara Falls ARS 2001a, Niagara Falls ARS 2009d, NYSDEC 2010c, USFWS 2010a, USFWS NYFO 2009, NY Natural Heritage 2007, NY Natural Heritage 2008

Notes:

1. The bald eagle was delisted on August 8, 2007. While there are no ESA requirements after this date, the eagles continue to receive protection under the Bald Eagle Protection Act.
2. Piping plover is listed as federally endangered in the Great Lakes Region, and as federally threatened in the Atlantic Coastal Region.
3. Osprey was observed flying over the installation.
4. Eastern box turtle observation might have been misidentification.
5. The eastern prairie fringed orchid was previously listed by the USFWS as federally threatened in New York in 2009; however, according to the 2010 species profile for the eastern prairie fringed orchid, the species is not known to occur in New York State (USFWS 2010b). The eastern prairie fringed orchid was removed from the 2010 USFWS threatened and endangered species list for New York State (USFWS 2010a), although it is still a federally listed species.

Key:

E = Endangered

SH = State Historical

D = Delisted

T = Threatened

NL = Not Listed

SC = Species of Special Concern

Six short-eared owls were observed on 12 March 1998 in the riparian shrub area of Cayuga Creek in the western portion of the installation, south of the runway, which includes a mixture of emergent wetland and dense shrub layer habitats. These were the only sightings of this species during this survey effort; however, additional unconfirmed sightings occurred in February 1999 on the north side of the runways (Niagara Falls ARS 1999b). It is suggested that the short-eared owl uses Niagara Falls ARS and adjacent lands for overwintering or migratory stopover habitat (Niagara Falls ARS 2001a). Habitat along the runways in the southern half of the installation, which includes upland successional field with several areas of emergent wetland, was described as consistent with short-eared owl preferred habitat. The area intended for herbicide application is not included in the eligible habitat areas described by USFWS (Niagara Falls ARS 1999b).

Horned lark. The horned lark, state-listed as a species of special concern, prefers open areas and disturbed grasslands with short grass heights. They are specific to barren lands such as plowed fields and overgrazed pastures and place their nests in shallow depressions scratched out of bare earth (Niagara Falls ARS 2001a). A few horned larks were heard early in the survey season (late May) in the grasslands at the far eastern end of the installation, north of Runway 28 and east of Taxiway A3. It was assumed that these birds were migrating through the area at the time of the survey and were using the fields to forage. However, these birds begin breeding in March and the young will fledge by May. It is possible that horned lark nested at the Niagara Falls ARS and that nests were overlooked due to the late start of the survey (Niagara Falls ARS 2009d). The 2001 USFWS inventory report concluded that limited sightings indicate infrequent, transient use by the species (Niagara Falls ARS 2001a).

Upland sandpiper. The upland sandpiper is state-listed as threatened. Upland sandpipers are grassland species that prefer low to moderate grass heights. An upland sandpiper was thought to be observed on 28 April 1998. Although this species could not be confirmed during this survey effort, several sightings occurred during the 2000 breeding season while other survey work was conducted. On one occurrence, observations were made of two adults that were displaying territorial behavior and one fledgling. No nest was found; however, repeated sightings during the breeding season suggest breeding activity on the Niagara Falls ARS (Niagara Falls ARS 2001a).

American bittern. The American bittern is a wetland species that is state-listed as a species of special concern. A single sighting was documented on 27 April 1999 in Cayuga Creek. This limited sighting indicates infrequent, transient use by this species (Niagara Falls ARS 2001a).

Least bittern. The least bittern, which is state-listed as threatened, was not found during USFWS surveys but has been identified on the installation in previous studies conducted by USFWS in 2001 and 2006. The least bittern nests exclusively in wetland habitats (Niagara Falls ARS 2009d).

Migratory birds are protected under the Migratory Bird Treaty Act of 1918 and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (see **Appendix A**). All of the native bird species observed on Niagara Falls ARS and listed in **Table 3-4** are migratory birds protected under the Migratory Bird Treaty Act. Niagara Falls ARS is within the Atlantic Migratory Bird Flyway. The Niagara River, approximately 4 miles west and 1.5 miles south of the installation, is believed to be an extremely important migratory corridor for waterfowl and land birds (Niagara Falls ARS 2009e).

Many species of greatest conservation need were observed on Niagara Falls ARS during the 2007 USFWS-LGLFRO surveys, including the devil crayfish (*Cambarus diogenes*), American woodcock (*Scolopax minor*), black-crowned night heron (*Nycticorax nycticorax*), bobolink (*Dolichonyx oryzivorus*), eastern meadowlark, great egret (*Ardea alba*), and willow flycatcher (*Empidonax traillii*). Bobolink and willow flycatcher nests were found during this survey (Niagara Falls ARS 2009d).

The devil crayfish were found to be numerous on Niagara Falls ARS during the 2007 USFWS-LGLFRO surveys. Devil crayfish can burrow at substantial distances away from a visible waterway where clay

soils are present. Clay soils are ubiquitous at the Niagara Falls ARS. In 2007, various open canopy habitat types on the installation were occupied and ranged from thick, densely rooted vegetation to manicured lawn. Devil crayfish chimneys and burrows were found along Cayuga Creek, the tributary to Cayuga Creek in the northern edge of the installation, along ditches and seepages, and in other mowed areas (Niagara Falls ARS 2009d). Due to their terrestrial dependency, conservation measures should include devil crayfish as a land dweller rather than as truly aquatic. Devil crayfish are subterranean during the day and are reported to be nocturnal terrestrial (i.e., on the ground surface) foragers. At present, imperilment of this species is not a concern. This species is able to maintain a population at the installation under the current mowing regime in the affected areas. As long as mowing (including regular lawn care and ditch mowing) is restricted to daytime hours, mortality should not result from blades or tires. However, individual devil crayfish could be impacted due to the periodic maintenance of ditches (i.e., digging and cleaning out) on the installation, as burrow depth can be as much as 5 meters underground. Mortality could be high for crayfish with shallow burrows proximal to ditch edges. There are no laws protecting devil crayfish from such a disturbance. However, populations are vulnerable due to the fact that western New York is at the northeastern edge of their geographic range, and as a result populations are limited (Niagara Falls ARS 2009d).

Critical Habitat

There is no USFWS-designated critical habitat within Niagara Falls ARS.

3.6 Hazardous Materials and Waste

3.6.1 Definition of the Resource

A hazardous substance, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. Section 9601(14)), is defined as follows: "(A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33; (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, (42 U.S.C. Section 6921); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any HAP listed under section 112 of the CAA (42 U.S.C. Section 7412); and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator of the USEPA has taken action pursuant to section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

Hazardous materials are defined by 49 CFR 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions" in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR Parts 105–180.

RCRA defines a hazardous waste in 42 U.S.C. Section 6903, as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

3.6.2 Affected Environment

Hazardous Materials and Petroleum Products. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards governing procurement, issuance, use, or disposal of hazardous materials and tracking and record-keeping for public safety and for compliance with all laws and regulations. AFI 32-7080, *Pollution Prevention Program*, incorporates the requirements of all Federal regulations, AFIs, and DOD Directives for the reduction of hazardous material uses and purchases. The primary hazardous materials addressed by AFI 32-7080 are O₃-depleting substances and the 17 chemicals listed under the USEPA Industrial Toxics Program. EO 12088, *Federal Compliance with Pollution Control Standards*, ensures that necessary actions are taken for the prevention, management, and abatement of environmental pollution from hazardous materials or hazardous waste due to Federal facility activities. The 914 AW maintains a Hazardous Materials Emergency Planning and Response Plan (Niagara Falls ARS 2008b) that addresses storage and management of hazardous materials at Niagara Falls ARS. The 914 AW has established a HAZMART in accordance with AFI 32-7086 (Niagara Falls ARS 2002a). The HAZMART ensures that only the smallest quantities of hazardous materials necessary to accomplish the mission are purchased and used. Hazardous and toxic material procurements at the Niagara Falls ARS are approved and tracked by the 914 AW Commander. The Environmental Management Office at Niagara Falls ARS supports and monitors environmental permits, hazardous material storage, and spill prevention and response.

Hazardous materials are used at Niagara Falls ARS for cleaning, maintenance, and repair of aircraft, vehicles, and facilities. Examples include motor oil, gasoline, jet fuels, coolants, hydraulic fluids, paints, paint thinners, strippers, and degreasing agents. Hazardous materials are either stored in properly designated storerooms or at the HAZMART in Building 207 (Niagara Falls ARS 1998a).

Hazardous and Petroleum Wastes. AFI 32-7042, *Solid and Hazardous Waste Compliance*, directs roles and responsibilities with waste stream management including planning, training, emergency response, and pollution prevention. The management of hazardous waste is governed by the RCRA Subtitle C (40 CFR Parts 260 through 270) regulations, which are administered by the USEPA. Hazardous waste generated at Niagara Falls ARS is managed in accordance with USEPA, New York State, and USAF regulatory requirements. The 914 AW maintains a Hazardous Waste Management Plan (Niagara Falls ARS 2002a), as directed by AFI 32-7042. The plan prescribes the roles and responsibilities of all members of Niagara Falls ARS with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for solid waste and hazardous waste management.

Niagara Falls ARS is considered a large-quantity generator of hazardous wastes. A large-quantity generator produces more than 2,200 pounds of hazardous waste per month or more than 2.2 pounds of acute hazardous waste per month (USEPA 2010e). Processes generating hazardous wastes on Niagara Falls ARS include aircraft and vehicle maintenance, parts cleaning, support equipment maintenance, general facility maintenance, painting, nondestructive inspection, and weapons training and cleaning (Niagara Falls ARS 2008b). Hazardous wastes are generated and accumulated at satellite accumulation points (SAPs) at Niagara Falls ARS. A SAP is an area at or near the point of waste generation where small quantities of “total regulated hazardous waste” up to 55 gallons or up to 1 quart of “acutely hazardous waste” are accumulated. Once the SAP reaches these limits, the waste is transported to the 90-Day Hazardous Waste Central Storage Area in Building 830, where it is kept for up to 90 days before it is transported off-installation for proper disposal. Typical types of hazardous wastes kept at the 90-Day Hazardous Waste Central Storage Area include T-56 compressor wash, antifreeze, paint, paint thinner, bead blast media, filters, and solvents (Niagara Falls ARS 2008b). Niagara Falls ARS uses the DOD-operated DRMO in Portsmouth, New Hampshire, or Mechanicsburg, Pennsylvania, for transfer of the

majority of its hazardous waste to a permitted treatment, storage, or disposal facility (Niagara Falls ARS 2008b).

A SAP can also accumulate nonhazardous waste and universal wastes. Regulatory accumulation limits are not imposed on nonhazardous wastes; however, there are accumulation time limits for universal waste. Universal waste generators are allowed to accumulate universal waste at their location for no more than 9 months from the accumulation start date. Once the 9-month time limit has been reached, the universal waste must be moved to its designated waste accumulation site. In New York, universal wastes include the following (NYSDEC 2010d):

- Batteries, including nickel-cadmium, lithium- or mercury-containing batteries, and lead-acid batteries
- Pesticides, including those that have been recalled or banned from use, obsolete pesticides, damaged pesticides, and those that are no longer needed
- Mercury-containing devices, including thermostats, switches, and other items where mercury is contained in a capsule or other container and the mercury is used to transmit pressure, temperature, or electricity
- Lamps, including fluorescent tubes, high-intensity discharge lamps, neon mercury vapor, high-pressure sodium, and metal halide lamps.

The 90-Day Hazardous Waste Central Storage Area in Building 830 and the SAPs are all inspected weekly (Niagara Falls ARS 2008b).

Lead-Based Paint. Lead was commonly used in house paint until the Federal government banned the use of most lead-based paint (LBP) in 1978. Therefore, it is assumed that all structures constructed prior to 1978 could contain LBP. Paint chips that fall from the exterior of buildings can potentially contaminate the soil if the paint contains lead. The USEPA has established recommendations for maximum lead soil contamination levels. No action is required if the lead concentration is less than 400 parts per million (ppm) in areas expected to be used by children, or less than 2,000 ppm in areas where contact by children is less likely. Soil abatement and public notice are recommended when lead levels exceed 5,000 ppm.

USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by reference the requirements of 29 CFR 1910.120, 29 CFR Part 1926, 40 CFR 50.12, 40 CFR Parts 240 through 280, the CAA, and other applicable Federal regulations. In addition, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), passed by Congress on 28 October 1992, regulates the use and disposal of LBP at Federal facilities. Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards. Niagara Falls ARS maintains a Lead-Based Paint Management Plan that was last updated in 2001 (Niagara Falls ARS 2001b).

Asbestos-Containing Materials. AFI 32-1052, *Facilities Asbestos Management*, provides the direction for asbestos management at USAF installations. This instruction incorporates by reference applicable requirements of 29 CFR Part 669 et seq., 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.3.80, Section 112 of the CAA, and other applicable AFIs and DOD Directives. AFI 32-1052 requires installations to develop an asbestos management plan for the purpose of maintaining a permanent record of the status and condition of asbestos-containing material (ACM) in installation facilities and documenting asbestos management efforts. In addition, the instruction requires installations to develop an asbestos operating plan detailing how the installation accomplishes asbestos-related projects.

Asbestos is regulated by USEPA under the CAA; Toxic Substances Control Act; CERCLA; and Century Code 23, Health and Safety Chapter 25 Air Pollution Control, with the authority promulgated under OSHA. Identification of ACM in installation facilities is governed by OSHA under the authority of the Occupational Safety and Health Act, 29 U.S.C. Section 669 et seq. Section 112 of the CAA regulates emissions of asbestos fibers to ambient air. Building materials in older buildings are assumed to contain asbestos. It exists in a variety of forms and can be found in floor tiles, floor tile mastic, roofing materials, joint compound used between two pieces of wallboard, some wallboard thermal system insulation, and boiler gaskets. If asbestos is disturbed, fibers can become friable. Common sense measures, such as avoiding damage to walls and pipe insulation, will help keep the fibers from becoming airborne. Friable ACM is any material containing more than 1 percent asbestos, and that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM is any ACM that does not meet the criteria for friable ACM. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Niagara Falls ARS maintains an Asbestos Management Program Plan that was last updated in 2001 (Niagara Falls ARS 2001c). The plan specifies procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM-abatement projects. The plan is designed to ensure that personnel who live and work on the installation are protected from exposure to airborne asbestos fibers and ensure that the installation remains in compliance with Federal, state, and local regulations pertaining to asbestos. In 1993, the Air National Guard Readiness Center, Civil Engineering Technical Service Center's Asbestos Management Team surveyed 31 buildings at Niagara Falls ARS for ACM. Results of the survey revealed the presence of ACM in some buildings (Niagara Falls ARS 2001c). Materials that could contain asbestos include pipe insulation and floor tiles. Asbestos materials are removed on an as-needed basis to minimize health risks from release of asbestos fibers during normal activities, maintenance, renovation, or demolition.

Polychlorinated Biphenyls. Polychlorinated biphenyls (PCBs) are a group of chemical mixtures used as insulators in electrical equipment such as transformers and fluorescent light ballasts. Federal regulations govern items containing 50 to 499 ppm PCBs. Chemicals classified as PCBs were widely manufactured and used in the United States throughout the 1950s and 1960s. PCB-containing oil is typically found in older electrical transformers and light fixtures (ballasts). Transformers containing greater than 500 ppm PCBs, between 50 and 500 ppm PCBs, and less than 50 ppm PCB are considered PCB, PCB-contaminated, and non-PCB, respectively.

Installation Restoration Program. The DOD's Installation Restoration Program (IRP) requires each installation to identify, investigate, and clean up hazardous waste disposal or release sites. The objectives of the IRP are to identify and fully evaluate any areas suspected to be contaminated with hazardous materials caused by past USAF operations and to eliminate or control any hazards to the public health, welfare, or the environment. The IRP is a subcomponent of the Defense Environmental Restoration Program that became law under the Superfund Amendments and Reauthorization Act. To date, a total of 14 IRP sites have been identified at Niagara Falls ARS (Niagara Falls ARS 2002b). The IRP at Niagara Falls ARS began in 1983 with a Phase I records search that identified 13 IRP sites resulting from past waste disposal and waste storage activities. Of the 13 IRP sites, 12 were recommended for further investigation and one ("old IRP Site 13") was closed and received a No Further Response Action Planned (NFRAP) status in 1990. In 1986, a new site (IRP Site 13) was added to the IRP. In 1996, three IRP sites (IRP sites 6, 11, and 12) received a NFRAP status. In 1998, interim corrective measures were installed at IRP sites 3, 10, and 13; and in 2000, interim corrective measures were implemented at IRP Site 5. Currently, eight IRP sites (IRP sites 1, 2, 4, 6, 9, 11, 12, and "old IRP Site 13") have a NFRAP status (Niagara Falls ARS 2002b). **Table 3-6** presents a summary of the IRP sites at Niagara Falls ARS and **Figure 3-2** presents the location of the sites. There are no IRP sites within the boundaries of the Proposed Action.

Because IRP sites 1, 2, 4, 6, 9, 11, 12, and Old Site 13 have an NFRAP status, they will not be discussed further in detail in this EA. IRP sites 3, 5, 8, and 13 are listed as Solid Waste Management Units in the installation's NYSDEC 373 Corrective Action Permit and are required to be closed under NYSDEC RCRA regulations in addition to being closed under the USAF IRP (Niagara Falls ARS 2002b).

Table 3-6. Installation Restoration Program Sites on Niagara Falls ARS

IRP Site (Site ID Number)	Name	Dates of Operation	Material Disposed	Contaminant	Status
1 (ST-11)	JP-4 Pipeline Leak (Building 600)	1969	JP-4	TRPH in soil, groundwater, and surface water/sediment	NFRAP
2 (ST-13)	POL Bulk JP-4 Tank C Leak	1982	JP-4	TRPH in soil and groundwater	NFRAP
3 (LF-08)	Landfill	1952– 1969	Construction rubble, coal ash, waste oil, shop wastes, batteries, electrical and car parts, and drums	Metals in soil, groundwater, and surface water/sediment	One groundwater pumping well and a recovery trench in place, as of 1999
4 (ST-09)	Base Exchange Gas Station Motor Gasoline Tank Leak	1981	Gasoline	TRPH and metals in soil, groundwater, and surface water/sediment	NFRAP
5 (SS-04)	NYANG Hazardous Waste Drum Storage Yard	1978– 1983	Drummed hazardous waste including solvents, paints, and oils	Metals in soil and groundwater	LTM
6 (ST-12)	POL Bulk JP-4 Tank A Leak	1979	JP-4	TRPH in soil and groundwater	NFRAP
7 (SS-14)	JP-4 Tank Truck Spill	1983	JP-4	TRPH in soil and groundwater	LTM
8 (SS-02)	Drum Storage Yard	1978– 1983	Drummed hazardous waste including solvents, paints, and oils	Metals in soil, groundwater, and surface water/sediment	LTM
9 (FT-07)	Fire Training Area No. 3	1963– 1983	Waste fuels, oils, solvents, and hydraulic fluid	Metals in soil, groundwater, and surface water/sediment	NFRAP
10 (FT-05)	Fire Training Area No. 1	1955– 1963	Waste fuels, oils, solvents, and hydraulic fluid	Metals in soil and groundwater	Two groundwater pumping wells and a recovery trench in place as of 1998

IRP Site (Site ID Number)	Name	Dates of Operation	Material Disposed	Contaminant	Status
11 (FT-06)	Fire Training Area No. 2	One year in the late 1950s	Waste JP-4	Metals in soil	NFRAP
12 (SS-03)	Drum Storage Yard	1950s– early 1960s	Drummed hazardous waste including solvents, paints, and battery acid oils	Metals in soil, groundwater, and surface water/sediment	NFRAP
13 (ST-10)	UST Pit	1971– 1987	General ship waste including waste oils, solvents, and automotive fluids	TRPH and metals in soil, groundwater, and surface water/sediment	Two groundwater pumping wells in place as of 1998
“Old IRP Site 13” (SS-01)	AFRC Hazardous Waste Drum Storage Yard	1979– 1983	Drummed hazardous waste including solvents, paints, and battery acid oils	N/A	NFRAP

Source: Niagara Falls ARS 2002b

Key:

HRC = hydrogen-releasing compound

ICM = Interim Corrective Measures

JP-4 = Jet Propellant-4

LTM = Long-term Monitoring

N/A = Not Available

NFRAP = No Further Remedial Action Planned

POL = Petroleum, Oils, and Lubricants

TRPH = Total Recoverable Petroleum Hydrocarbons

UST = underground storage tank

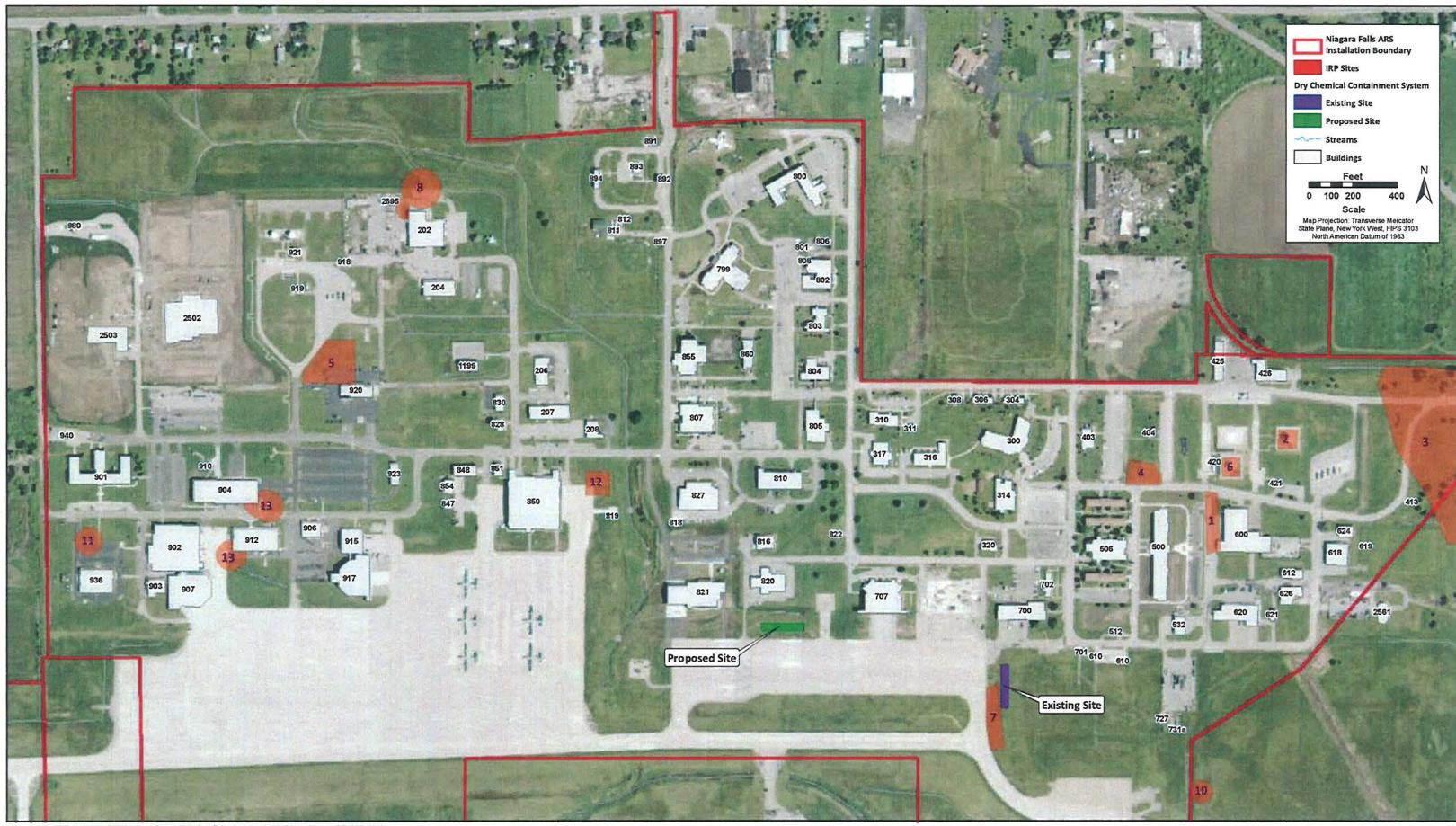


Figure 3-2. IRP Sites at Niagara Falls ARS

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4. Environmental Consequences

The following discussion elaborates on how environmental impacts are categorized and described for the resource areas analyzed.

Short-term or long-term. These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term effects are those that would occur only with respect to a particular activity or for a finite period or only during the time required for construction or installation activities. Long-term effects are those that are more likely to be persistent and chronic.

Direct or indirect. A direct effect is caused by and occurs contemporaneously at or near the location of the action. An indirect effect is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct effect of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.

Negligible, minor, moderate, or major. These relative terms are used to characterize the magnitude or intensity of an impact. Negligible effects are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. A major effect is one that is severely adverse or exceptionally beneficial.

Adverse or beneficial. An adverse effect is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment. A single act might result in adverse effects on one environmental resource and beneficial effects on another resource.

Significance. Significant effects are those that, in their context and due to their intensity (severity), meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27).

Context. The context of an effect can be localized or more widespread (e.g., regional).

Intensity. The intensity of an effect is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Effects are also considered in terms of their potential for violation of Federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown effects, or unique or unknown risks; if there are precedent-setting effects; and their cumulative effects (see Section 5).

4.1 Air Quality

4.1.1 Evaluation Criteria

The Federal *de minimis* threshold emissions rates were established by the USEPA in the General Conformity Rule to focus analysis requirements on those Federal actions with the potential to substantially affect air quality. **Table 4-1** presents these thresholds, by regulated pollutant. As shown in **Table 4-1**, *de minimis* thresholds vary depending on the severity of the nonattainment area classification.

Table 4-1. Conformity *de minimis* Emissions Thresholds

Pollutant	Status	Classification	<i>de minimis</i> Limit (tpy)
O_3 (measured as NO_x or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO_x)
	All others		100
CO	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO_x)
		Outside ozone transport region	100
PM ₁₀	Nonattainment/maintenance	All	100
PM _{2.5} (measured directly, as SO_2 , or as NO_x)	Nonattainment/maintenance	Serious	70
		Moderate	100
		All maintenance areas	100
SO ₂	Nonattainment/maintenance	All	100
NO _x	Nonattainment/maintenance	All	100
Pb	Nonattainment/maintenance	All	25

Source: 40 CFR 93.153

The environmental consequences on local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS “nonattainment” areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Increase the frequency or severity of a violation of any ambient air quality standard
- Delay the attainment of any standard or other milestone contained in the SIP or permit limitations.

With respect to the General Conformity Rule, effects on air quality would be considered significant if the proposed Federal action would result in an increase of a nonattainment or maintenance area’s emissions inventory above the *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been redesignated as a maintenance area. 40 CFR 93.153(c) exempts certain Federal actions from a general conformity determination. However, these exemptions do not apply to this Proposed Action.

4.1.2 Proposed Action

No construction or demolition projects are associated with the Proposed Action that would generate air pollutant emissions and the Proposed Action would not result in a net increase in personnel or commuter vehicles.

Operational Emissions. Operational emissions associated with the Proposed Action would not be expected to result in adverse effects on air quality. Day-to-day operations associated with the Proposed Action would generate emissions of criteria pollutants as some of the herbicides contain VOCs. Under NYCRR Part 201-3.3, *Trivial Air Activities*, activities involving maintenance of grounds such as lawn care, weed control, and pest control are considered trivial activities (NYCRR 2010). Such activities are not expected to cause adverse impacts on air quality, provided they are operated and maintained in a manner consistent with good engineering practices.

The dry chemical testing would result in particulate matter emissions; however, because the Proposed Action is simply relocating an existing operation to a different part of the installation with no change in testing methods or operational level, there would be no expected increase in air emissions.

Greenhouse Gas Emissions. None of the products associated with the Proposed Action would contain GHGs and the Proposed Action would not require the combustion of fossil fuels, therefore the Proposed Action would not be expected to contribute directly to emissions of GHGs.

Summary. Since Niagara County is classified a Subpart 1 basic nonattainment area for 8-hour O₃, General Conformity Rule requirements would be applicable to the Proposed Action. The Proposed Action would generate emissions well below *de minimis* levels. In addition, the Proposed Action would generate emissions well below 10 percent of the emissions inventories for NFIAQCR 162 (USEPA 2010d). Therefore the Proposed Action would not have significant effects on air quality on regional or local air quality.

4.1.3 No Action Alternative

Under the No Action Alternative, Niagara Falls ARS would not implement the Proposed Action, which would result in the continuation of the existing condition, as described in **Section 2.1**. Therefore, no direct or indirect adverse impacts would be expected on local or regional air quality from implementation of the No Action Alternative.

4.2 Land Use

4.2.1 Evaluation Criteria

An analysis of the effects of a proposed action on land use on an AFRC installation addresses the potential for impacts to occur on areas affected and the potential for buildings and other obstructions to intrude into controlled airspace. New construction should be compatible with current land use guidelines. Land use can remain compatible, become compatible, or become incompatible. Projected compatibility issues were measured both qualitatively and quantitatively. The level of potential land use effects is based on the degree of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use effect would be significant if it met any of the following criteria:

- Was inconsistent or in noncompliance with existing land use plans or policies

- Precluded the viability of existing land use
- Precluded continued use or occupation of an area
- Was incompatible with adjacent land use to the extent that public health or safety is threatened
- Conflicted with planning criteria established to ensure the safety and protection of human life and property.

4.2.2 Proposed Action

Implementation of the Proposed Action would not be expected to result in adverse impacts on on-installation land use. The Proposed Action would be in compliance with the 1998 *Niagara Falls Air Reserve Station General Plan*. As stipulated in the General Plan, only Air Force-approved herbicides would be used as part of the Proposed Action. Implementation of the Proposed Action would not require changing the land use designation of any land at Niagara Falls ARS. The Proposed Action would not preclude the viability of existing adjacent land uses or future plans. Implementation of the Proposed Action would not impact any established Explosives Safety Quantity-Distance (QD) arcs of aircraft accident potential zones. No impacts on off-installation land use would be expected from implementation of the Proposed Action.

4.2.3 No Action Alternative

Under the No Action Alternative existing land use conditions would remain the same as described in **Section 3.2**. No impacts would be expected.

4.3 Safety

4.3.1 Evaluation Criteria

Impacts were assessed based on direct effects from construction activities, including secondary effects, such as environmental contamination. The extent of these secondary effects is situationally dependent and difficult to quantify.

4.3.2 Proposed Action

Short-term, minor, adverse effects on safety would be expected from herbicide application activities. Implementation of the Proposed Action would slightly increase the short-term risk associated with herbicide contractors performing work at Niagara Falls ARS during the normal workday because the level of such activity would increase. Herbicide contractors would be required to establish and maintain safety programs. The Proposed Action would not pose a safety risk to installation personnel or to activities at the installation. No off-installation safety impacts would be expected from herbicide application activities associated with the Proposed Action.

The annual dry chemical testing would have a long-term, direct, beneficial impact on safety by ensuring that the fire department's dry chemical equipment is in good working order and available to fire fighters. Only USEPA- and Niagara Falls ARS-approved herbicides would be applied by licensed and trained applicators and all application rates and techniques would be followed according to label directions. All required PPE to prevent exposure to herbicides would be used. The use of mechanical equipment has the potential for minor, indirect impact on the safety of grounds maintenance crews from flying debris or injury from equipment accidents. Employees conducting mechanical treatments near roadways would be required to wear orange reflective safety vests to minimize potential accidents from inattentive drivers.

Gloves would also be worn during treatments to avoid injury to hands. Testing would be conducted so that the dry chemical is emitted in the direction with prevalent wind to avoid effects from ingesting or absorbing the chemical through the skin.

Herbicide application activities would be accomplished in accordance with Federal, state, and local regulations to minimize hazards associated with hazardous materials, wastes, and substances. These hazards are discussed in more detail in **Section 3.6**.

4.3.3 No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions and neither of the proposed projects would occur, which would result in long-term, negligible, adverse impacts on safety. Herbicide treatment would continue, but would not be extended to improved areas allowing broadleaf weeds to dominate the landscape and continuously be treated with additional herbicide. Annual testing of the Niagara Falls ARS fire department's dry chemical equipment would continue, but would be conducted away from the new fire department, and additional time would be required to prepare for and conduct the test in a setting closer to the flightline. At the proposed dry chemical testing location, no NOTAM would need to be issued and fire fighters would be conducting testing farther away from the activities of the flightline.

4.4 Water and Soil Resources

4.4.1 Evaluation Criteria

Evaluation criteria for effects on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. A proposed action would have significant effects on water resources if it were to do one or more of the following:

- Substantially reduce water availability or supply to existing users
- Overdraft groundwater basins
- Exceed safe annual yield of water supply sources
- Substantially adversely affect water quality
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

The potential effect of flood hazards on a proposed action is important if such an action occurs in an area with a high probability of flooding.

Minimization of soil erosion is considered when evaluating potential effects of a proposed action on soil resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development. Effects on soils would be significant if they would alter the soil composition, structure, or function within the environment.

4.4.2 Proposed Action

4.4.2.1 Water Resources

4.4.2.1.1 Herbicide Application

Groundwater. Use of herbicides has the potential for long-term, minor, direct adverse effects on groundwater if spills were to occur. However, because there are no potable water wells on the installation, no herbicides would be applied near drinking water sources and no impact on drinking water at the installation would be anticipated.

The glyphosate in Roundup Pro™ and Kleenup Pro™ is strongly adsorbed onto soil particles, with low potential to move through soil to contaminate groundwater. Microbes in the soil readily and completely degrade it even under low-temperature conditions. When released into water, glyphosate tends to adhere to sediments and is readily degraded by microbial action into natural substances such as carbon dioxide.

Triamine®, AM-40, and Barricade have a greater potential to contaminate groundwater. The herbicides have a short half-life of approximately 10 days and are readily degraded into nontoxic substances by soil microbes and aquatic microorganisms. Leaching into groundwater could occur in coarse-grained, sandy soils with low organic content or with very basic soils. In general little runoff occurs with 2, 4-D or its amine salts. Most cases of groundwater contamination involving phenoxy herbicides such as Triamine®, AM-40, and Barricade have been associated with mixing/loading and disposal, which would not occur on the installation. Caution would be exercised when handling phenoxy herbicides at such sites to prevent contamination of groundwater.

Surface Water. The application of herbicides would have a long-term, negligible, adverse impact on water quality with the use of proper application practices. In addition, the use of buffers around surface water bodies would further reduce the possibility of movement of herbicides into water resources from drift or storm water runoff.

Herbicide application would occur only at designated areas on the installation using best management practices (BMPs) to lower the potential for runoff of herbicide residue into surface water bodies. No mixing or loading of herbicides would occur within the installation boundaries. Herbicides would not be applied within or along the banks of surface waters. If an accidental spill occurs on the installation, the BOS contractor would collect the material and dispose of it in accordance with manufacturer's specifications. Application methods, weather conditions, and timing are other important criteria to consider for reduction of surface water contamination.

The greatest concentration of herbicide would be Roundup Pro™ and Kleenup Pro™, whose active ingredient is glyphosate. Glyphosate can enter surface water through three routes—direct application to aquatic vegetation, binding to soil that washes off treated terrestrial sites, or through drift from treated areas near water. Because herbicides would not be used on aquatic vegetation, that method would not contribute to degradation of water quality and will not be discussed in detail. Through terrestrial applications of glyphosate, it is expected that a small amount of the applied herbicide might enter surface waters indirectly through storm water runoff or soil particles that wash off treated fields. Roundup Pro™ and Kleenup Pro™ residues in water resulting from such wash-off are typically seasonal and dissipate over time. In sediment, glyphosate is degraded over time by microorganisms. When glyphosate applications occur near water, it is possible that a small percentage of sprayed material could reach the water during application. Once in contact with surface water, glyphosate is removed by binding to sediment and is then degraded by microbes. Glyphosate has a half-life of less than 7 days in water and no

significant bioaccumulation would be expected. No herbicide application would be conducted within or adjacent to surface water features.

Herbicide application would not occur within or near any of the installation wetlands, waters of the United States, or floodplains. No impacts would be anticipated.

4.4.2.1.2 Dry Chemical Testing

Groundwater. No impacts on groundwater would be anticipated during dry chemical testing, as spent dry chemical would be captured by the containment system. In the event of a spill, procedures identified in the installation's Spill Prevention Control and Countermeasures (SPCC) Plan would be followed to quickly contain and clean up a spill. Please see **Section 3.6** for a discussion of hazardous materials and wastes. There remains the possibility that a spill or leak could occur, but implementation of the BMPs identified in the SPCC Plan would minimize the potential for and extent of associated contamination.

Surface Water. No impacts on surface water would be anticipated. The dry chemical testing would occur within 50 feet of a drainage ditch; however, the ditch would be avoided and testing would be conducted in the direction with the prevailing wind (typically to the west). Relocating the dry chemical testing site would not require a modification to the installation's SPDES permit. SPDES General Permit, Part IIA, exempts "discharges from fire-fighting activities" with certain conditions. BMPs and mitigation measures would be addressed in a site-specific SWPPP.

No wetlands, waters of the United States, or floodplains would be in proximity to the dry chemical testing site, so no impacts would be expected.

4.4.2.2 Soil Resources

4.4.2.2.1 Herbicide Application

It is anticipated that short-term, minor, direct, adverse impacts on soil would occur from herbicide applications, as some chemicals adsorb strongly to soil, so the soil chemistry would be altered temporarily until the chemicals have adequately degraded from microbial action. Short-term, negligible impacts could occur after weedy vegetation has died but before other vegetation has become established. Soil could locally be more susceptible to erosion and sedimentation before vegetation is established.

4.4.2.2.2 Dry Chemical Testing

No impacts on soil would be anticipated from dry chemical testing, as the containment system should capture any spent chemical.

4.4.3 No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions at the installation, as described in **Section 3.4.2.2**. No impacts on water or soil resources would be anticipated.

4.5 Biological Resources

4.5.1 Evaluation Criteria

The significance of effects on biological resources is based on: (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that

would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to proposed activities, and (4) the duration of ecological effects. A habitat perspective is used to provide a framework for analysis of general classes of effects (e.g., noise, human disturbance).

Ground disturbance and noise associated with construction activities directly or indirectly cause potential impacts on biological resources. Direct impacts from ground disturbance were evaluated by identifying the types and locations of potential ground-disturbing activities in correlation to important biological resources. Habitat removal and damage or degradation of habitats could be effects associated with ground-disturbing activities.

Noise associated with a proposed action might be of sufficient magnitude to result in the direct loss of individuals and reduce reproductive output within certain ecological settings. Ultimately, extreme cases of such stresses could have the potential to lead to population declines or local or regional extinction. To evaluate effects, considerations were given to number of individuals or critical species involved, amount of habitat affected, relationship of the area of potential effect to total critical habitat within the region, type of stressors involved, and magnitude of the effects. Since no federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS, and there is no critical habitat on the installation, no environmental analysis was conducted pursuant to Section 7 of the ESA.

4.5.2 Proposed Action

Vegetation. The Proposed Action involves the application of selective and nonselective herbicides in accordance with the Niagara Falls ARS Integrated Pest Management Plan directive of using nonchemical control efforts to the maximum extent possible before applying herbicides (herbicides are only used if necessary and are always minimally applied, as required, to control the pest). The Proposed Action would have a direct impact on target vegetation (weedy species or grasses growing in undesired locations) by killing or slowing the growth of the target species. There would be an indirect, beneficial impact on nontarget vegetation (desired grasses within the improved grounds during broadleaf control) by allowing them to better compete with the target species. When Roundup Pro™ and Kleenup Pro™ are sprayed on plant foliage, they are absorbed and then translocated throughout the plant's tissues. Once inside the plant, glyphosate inhibits the production of an enzyme, called EPSP synthase, which in turn prevents the plant from manufacturing certain aromatic amino acids essential for plant growth and life. Glyphosate interrupts the metabolic process in plants, so its effect might not be visible for about 4 days in annual plants and up to 7 days in perennial plants. After application, the plant wilts and turns yellow, and then turns brown as the plant tissue deteriorates. At the same time, glyphosate decomposes the plant's underground roots and rhizomes.

Ultimately, the entire plant dies, is incapable of regenerating, and enriches the soil as it decomposes. Tests have shown that Roundup Pro™ and Kleenup Pro™, when used according to label directions, have no weed killing activity once in contact with the soil. Glyphosate will not move in or on the soil to affect nontarget vegetation, and it does not move through the soil to enter other nontarget plants by the root system. Glyphosate is only effective when it comes into contact with the green, growing parts of plants. Other tests have shown that glyphosate binds tightly to most soil particles until it is degraded. Glyphosate has a half-life between 2 and 174 days and is mainly degraded by micro-organisms present in soil. Because glyphosate binds to soil until it is degraded, the likelihood that Roundup Pro™ and Kleenup Pro™ would harm nearby plants is negligible.

Triamine® and AM-40 are considered selective systematic herbicides. They act as growth regulators. The salts in the herbicide are rapidly absorbed by the roots and the ester compound by the foliage. After absorption, the herbicide bends and twists the stems, then causes swelling and leaf cupping, followed by wilting and death. The three components of Triamine® each have a different half-life, ranging from 6 to

17 days. The active ingredients in Triamine® are readily degraded by soil microbes and aquatic microorganisms. This product is toxic to aquatic invertebrates. Drift or runoff can adversely affect aquatic invertebrates and nontarget plants. AM-40 has a low persistence in soil with a half-life of 6 to 9 days and is readily degraded into nontoxicological substances. As with Triamine®, microbial degradation is the primary route of AM-40 breakdown in soil. Barricade is a pre-emergent herbicide that is absorbed primarily by emerging shoots. It then acts as a microtubule assembly inhibitor. Barricade is persistent and immobile in soil and stable in water but does not bioaccumulate.

Wildlife. Extensive development of the Niagara Falls ARS has left minimal habitat for wildlife. The herbicides proposed for use do not accumulate in birds and mammals and therefore would not impact them indirectly through the consumption of weeds with applied herbicides. The herbicides proposed for use are minimally retained and rapidly eliminated in fish, birds, and mammals. Herbicides would not be applied directly to aquatic vegetation. However, if the herbicides came in contact with aquatic species, based on its water solubility, glyphosate is not expected to bioconcentrate in aquatic organisms. The Proposed Action would therefore have a negligible indirect impact due to the herbicides toxicity to aquatic species.

Triamine® and AM-40 are toxic to aquatic invertebrates. Drift and runoff of the herbicides could adversely affect aquatic invertebrates and nontarget plants. There are a variety of microorganisms in soil, freshwater, and marine ecosystems that are capable of degrading 2,4-D, which is the active ingredient in Triamine and AM-40. There is no evidence that bioconcentration of 2,4-D occurs through the food chain. This is known from large-scale monitoring studies of soils, foods, feedstuffs, wildlife, human beings, and other environmental cycling studies. The use of Triamine and AM-40 would not be expected to result in adverse impacts on strictly aquatic invertebrate species, since no herbicide application would occur within or adjacent to any water bodies. However, several species of crayfish occur on Niagara Falls ARS, which burrow within the ground and can be found at substantial distances away from a visible waterway. Many crayfish species, including the devil crayfish, a sensitive species discussed in **Protected and Sensitive Species**, forage on the ground surface at night. Therefore, adverse impacts on these and other terrestrial invertebrates could occur from the Proposed Action due to localized mortality of individual crayfish in areas where herbicides are applied. The herbicides proposed for use would not be expected to bioaccumulate within the crayfish and other invertebrates; therefore, no long-term, adverse impacts related to bioaccumulation would be expected.

Barricade has low solubility in water. At the limit of solubility, Barricade is not toxic to fish. However, at concentrations substantially above the level of water solubility, Barricade can be toxic to fish. Therefore, drift and runoff from treated areas can be hazardous to aquatic organisms in adjacent sites. Although toxic at high concentrations, use of Barricade would not be expected to result in adverse impacts. No herbicide application would occur within or adjacent to any water bodies and application would not be frequent enough to increase concentrations to toxic levels.

Protected and Sensitive Species. The Proposed Action would have no impact on threatened and endangered species. No federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS. The Proposed Action would not include herbicide application in the areas where the installation's state-listed and sensitive bird species have been seen. To minimize impacts on state-listed and sensitive bird species and all migratory birds, care would be taken to avoid herbicide application in areas identified as ideal for foraging and nesting.

The herbicides proposed for use can be toxic to aquatic invertebrates. The devil crayfish, a New York State species of greatest conservation need, occurs throughout Niagara Falls ARS, at times at substantial distances away from visible waterways. Therefore, adverse impacts on devil crayfish could occur from the application of these herbicides due to mortality of individual crayfish in areas where herbicides are

applied. Impacts would be restricted to areas where herbicides are applied and no population-level impacts on the devil crayfish would be expected.

Critical Habitat. There is no USFWS-designated critical habitat in the area designated for herbicide application. Therefore, no impacts on critical habitat would be expected as a result of implementing the Proposed Action.

4.5.3 No Action Alternative

Under the No Action Alternative, existing conditions would remain as is and implementation of the Proposed Action would not occur. If the No Action Alternative were carried forward, there would be no associated change in or effects on biological resources at Niagara Falls ARS.

4.6 Hazardous Materials and Waste

4.6.1 Evaluation Criteria

Impacts on hazardous materials and waste would be considered significant if the action resulted in noncompliance with applicable Federal, state, and USAF regulations, or increased the amounts of hazardous substances generated or procured beyond current Niagara Falls ARS waste management procedures and capacities. Impacts on the IRP would be considered significant if the action disturbed or created contaminated sites, resulting in adverse effects on human health or the environment.

4.6.2 Proposed Action

Hazardous Materials and Petroleum Products. Short-term, negligible, adverse impacts would be expected from implementation of the Proposed Action. No hazardous materials would be used during implementation of the Proposed Action; however, the herbicides used under the Proposed Action would be treated as hazardous materials in the event of a spill. Niagara Falls ARS has developed an emergency response manual for all types of hazardous spills including spills for pesticides and herbicides. The *Hazardous Material Emergency Planning and Response (HAZMAT) Plan* (December 2008) contains guidelines for clean-up procedures. Any spilled pesticides would be cleaned up in accordance with the general outline in the plan with specific guidance taken from Technical Memorandum 15 to minimize the potential for pesticide spills (DOD 1992, Niagara Falls ARS 2008a). All vehicles used in applying or transporting pesticides or herbicides would be required to carry spill kits that include multi-use absorbents and deflection booms.

Vehicles used to apply the herbicides would contain fuel, lubricating oils, hydraulic fluid, and coolants that could be regulated hazardous materials if they spilled or leaked at any of the project sites. Prior to mobilization, all vehicles and equipment would be inspected to ensure a leak-free operation. Appropriate spill containment material would be kept on site. All fuels, lubricating oils, hydraulic fluid, and coolants would be contained in the equipment or stored in appropriate containers and would be removed upon completion of the Proposed Action.

Cleanup after herbicide application would involve rinsing tools and equipment, and rinsing and disposing of empty herbicide containers. Tools, vehicles, and equipment would be cleaned using detergent and the appropriate decontamination solution, as specified in Technical Information Memorandum 15, *Pesticide Spill Prevention and Management* (DOD 1992). The decontamination solution would be applied to contaminated equipment by soaking the equipment in a pail filled with solution or using a scrub brush. All tools and surfaces would be thoroughly rinsed with sparing amounts of clean water. All rinse water

and spent decontamination solution would be collected in drip pans or other suitable containers and transferred to a properly labeled leakproof container for disposal. Empty herbicide containers would be triple-rinsed. Rinsate would be added to the spray mix or disposed of on the application site at a rate that does not exceed amounts addressed on the label. Empty and rinsed herbicide containers would be punctured and disposed of according to label directions.

Although not listed as a hazardous material, Purple-K dry chemical would be used during dry chemical testing. In an effort to minimize the release of Purple-K into the environment, Fire Department personnel would test equipment by spraying the chemical into a 50-foot, 20-inch round plastic tube temporary containment system. This system would minimize potential releases; therefore, no adverse impacts would be expected.

Hazardous and Petroleum Wastes. Short-term, negligible to minor, adverse impacts would be expected from implementation of the Proposed Action. Small quantities of petroleum wastes would be generated from equipment used to apply herbicides; however, it is anticipated that the quantity generated would be minor and would not be expected to exceed the capacities of existing hazardous waste disposal facilities. Hazardous wastes would be handled under the existing DOD RCRA-compliant waste management programs and, therefore, would not be expected to increase the risks of exposure to workers and installation personnel. The 914 AW would be responsible for the disposal of hazardous wastes in accordance with Federal, state, and local regulations and the Hazardous Waste Management Plan.

Although not a listed hazardous waste, Purple-K dry chemical used during dry chemical testing would be contained and collected. Disposal of spent material would be collected and turned into Civil Engineering for off-installation disposal as a solid waste through the DRMO. Dry chemical testing would occur annually and would not be expected to generate major quantities of spent Purple-K dry chemical.

Lead-Based Paint. No LBP would be encountered or used during implementation of the Proposed Action; therefore, no impacts would be expected.

Asbestos-Containing Materials. No ACM would be encountered or used during implementation of the Proposed Action; therefore, no impacts would be expected.

Polychlorinated Biphenyls. No PCBs would be encountered during implementation of the Proposed Action; therefore, no impacts would be expected.

Installation Restoration Program. Herbicide application would occur on active IRP Sites 3 and 5; however, no impact would be expected. Application procedures would not impact ongoing groundwater monitoring or other restoration activities. Restoration activities at the IRP sites would not prevent the application of herbicides.

4.6.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. There would be no soil disturbance and no risk of encountering hazardous substances. No construction would occur as planned under the Proposed Action. In general, there would be no change in or impacts on installation restoration, or hazardous materials and wastes at Niagara Falls ARS if the Proposed Action was not implemented.

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5. Cumulative and Adverse Effects

CEQ regulations stipulate that the cumulative effects analysis in an EA should consider the potential environmental effects resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR Part 1508.7). CEQ guidance in considering cumulative effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with a proposed action. The scope must consider other projects that coincide with the location and timetable of a proposed action and other actions. Cumulative effects analyses must also evaluate the nature of interactions among these actions (CEQ 1997).

5.1 Projects Identified for Potential Cumulative Effects

The scope of the cumulative effects analysis involves both timeframe and geographic extent in which effects could be expected to occur, and a description of what resources could potentially be cumulatively affected. For the purposes of this analysis, the temporal span of the Proposed Action is 2 years, which would encompass the initial herbicide application and dry chemical testing periods. For most resources, the spatial area for consideration of cumulative effects is Niagara Falls ARS, though a larger area is considered for some resources.

New Construction Projects. The 914 AW is preparing an EA for the proposed construction and operation of ten new facilities at Niagara Falls ARS. The proposed facilities and anticipated square footage and dates of completion are identified in **Table 5-1**. A full and detailed analysis of these proposed facilities construction projects is in draft form, so potential environmental effects as a result of this project are discussed generally for the purposes of this cumulative effects analysis. No significant environmental effects are anticipated from any of these projects. The Joint AFRC/ANG Wing Headquarters Facility, Joint Medical Facility, Visitor’s Quarters Parking Area, Flight Simulator Facility, and Visiting Quarters, Phases III and IV would occur wholly or partially in areas proposed for expanded herbicide application. New construction projects, particularly those seven that would be part of the expanded herbicide application, are considered in the cumulative effects analysis.

Modifications to Runway 6-24. The Niagara Frontier Transportation Association (NFTA) plans to modify Runway 6-24 to comply with Runway Safety Area standards. The primary project included in this proposal is to shift the runway northeast. The runway shift would require moving the property fence, minor taxiway pavement modifications, removal of vertical obstructions (i.e., trees) along the approach and departure paths, and relocating approximately 2,440 linear feet of Cayuga Creek. Other projects associated with runway modifications include the relocation and rehabilitation of Taxiway K and the acquisition of a 30-acre parcel east of Walmore Road across from the end of Runway 24.

An EA was prepared and a FONSI signed in 2009 (FAA 2009). The proposed modifications to Runway 6-24 are fairly removed from the Proposed Action, so most adverse effects associated with construction activities would have little to no potential for cumulative effects when considered together. The most notable short-term and permanent adverse effects environmental impacts identified in the EA would result from the relocation of 2,440 linear feet of Cayuga Creek and a 0.28-acre riparian emergent wetland. Mitigation would include constructing a new 1,950-foot stream bed outside the Runway Safety Area with bioengineered shore erosion features and fish habitat enhancements. Another 200- to 300-foot section of Cayuga Creek downstream from the affected area might also undergo bioengineered erosion protection as mitigation. It was determined that these impacts would not be significant. Runway modifications are considered for potential cumulative effects to determine if water resources could be cumulatively adversely affected as a result of several ongoing projects.

Table 5-1. Summary of New Construction Projects

Facility Name	Project Location and Description	Size (ft ²)	Date of Completion (FY)	Personnel Changes
Joint AFRC/ANG Wing Headquarters Facility	New facility would be south of Building 798 along Ent Avenue on what is currently a baseball field.	29,150	2016	0
C-130 Flightline Operations Facility	New facility and associated roads, parking areas, and utilities would be between Buildings 915 and 912. Buildings 906 and 912 would be demolished (28,036 ft ²).	371,194	2011 (Phase 1) 2012 (Phase 2)	+20
Joint Medical Facility	New facility and parking areas would be west of Building 320 along Kirkbridge Drive.	54,108	2013	0
Visitor's Quarters Parking Area	New previous parking area south of Building 506.	90,000	2016	0
Flight Simulator Facility	New facility would be across from Building 320 and adjacent to the proposed Joint Medical Facility.	11,312	2013	0
Visiting Quarters, Phases III and IV	New facilities would be south of Building 506 and west of Building 500 (Phase III) and at the current location of Building 403 (Phase VI). Building 403 would be demolished (5,418 ft ²).	432,154	2014	0
Munitions Storage Igloo and Munitions M&I Facility	New facility would be south of Building 620 along Otis Drive. A new driveway and new utilities would likely be required (200 feet). A new parking facility would be constructed to the northwest of Building 727.	29,918	2014	0
EOD Range	New range would be south of Building 700 along Otis Drive.	11,055	2011	0
Fill-in Ramp South of Hangar 707	Hangar 707 would be extended to the south to accommodate increased aircraft parking.	213,284	TBD	0

Construct and Operate an Indoor Small Arms Range. The 914 AW plans to construct and operate a 21-firing point, live-fire, indoor small arms range. The facility would be constructed to satisfy certification requirements for the M-16 series rifle, M-9 pistol, M-11 pistol, M-870 shotgun, M-240B machine gun, and M-249 automatic rifle. The facility would be north and east of Building 426 on approximately 3 acres of land. An EA for this project was prepared in August 2010 (Niagara Falls ARS

2010b). Short-term, minor, adverse effects associated with construction activities were identified; these construction-related effects would be limited to the construction site and immediately surrounding areas. Long-term, adverse effects on air quality from firing leaded ammunition (negligible to minor effect), on water resources from slight alterations of a wetland tributary (minor effect), and on vegetation and wildlife resources from the permanent loss of habitat (negligible to minor effects) were also identified. The small arms range would be approximately 950 feet from Project 4, the closest project in this Proposed Action, so there would be minimal potential for cumulative effects associated with construction activities. The small arms range is considered for potential cumulative effects to determine if water resources could be cumulatively adversely affected as a result of several ongoing projects.

Other Development in Niagara Falls Area. Niagara Falls is an urban area with ongoing development activity. The environmental effects of the projects analyzed in this EA would have little potential to interact with or result in cumulative effects with any other projects off the installation and the IAP. Therefore, potential cumulative effects associated with other development activities in the Niagara Falls area were not considered in detail in this EA.

5.2 Resource-Specific Cumulative Effects

Table 5-2 summarizes past actions, existing conditions, environmental effects of the Proposed Action, and environmental effects of other known actions on Niagara Falls ARS and IAP. All resources that were evaluated in detail in this EA are included in **Table 5-2**. Those resource areas that could experience cumulative effects are analyzed in more detail.

No significant adverse cumulative effects were identified in the cumulative effects analysis.

Air Quality. The Proposed Action would have no adverse effect on air quality, so no cumulative effects would be expected.

Land Use. The Proposed Action would have no adverse effect on land use, so no cumulative effects would be expected.

Safety. Long-term beneficial effects on safety were identified as a result of providing onsite EOD training (i.e., Project 9 of the Proposed Action), modifications to Runway 6-24, and conducting dry chemical testing to ensure the Fire Department's dry chemical equipment is in good working order. The Proposed Action would have a negligible cumulative effect on safety.

Table 5-2. Summary of Past Actions, Existing Conditions, the Proposed Action, and Known Future Actions

Resource Area	Past Actions	Existing Conditions	Proposed Action	Known Future Actions
Air Quality	Niagara Falls ARS is a basic nonattainment area for 8-hour O ₃ .	Niagara Falls ARS is registered as a minor source of air emissions and generates emissions from aircraft, vehicles, and buildings.	No adverse effects expected.	<p><i>New Construction Projects:</i></p> <ul style="list-style-type: none"> • Short-term, minor, adverse effects would be expected from construction and demolition activities. • Long-term, minor, adverse effects would be expected from the operation of boilers. <p><i>Small Arms Range:</i></p> <p>Short-term, minor, adverse effects are expected from construction activities.</p> <p>Long-term, negligible to minor, adverse effects are expected from firing leaded ammunition.</p>
Land Use	Past development practices (conversion of forest to agriculture) has extensively modified land use.	Niagara Falls ARS strives to develop the installation through identification and consolidation of compatible activities.	No adverse effects expected.	<p><i>All Projects:</i></p> <ul style="list-style-type: none"> • Future activities would modify existing land use but would not be expected to result in incompatible land uses.
Safety	Niagara Falls ARS has abided by Federal health and safety regulations.	Niagara Falls ARS abides by Federal health and safety regulations.	<p>Short-term, negligible to minor, adverse effects on safety could occur while herbicides are being applied.</p> <p>Long-term, beneficial effects on safety would be expected as a result of dry chemical testing by ensuring the Fire Department's Dry Chemical Equipment is in good working order.</p>	<p><i>New Construction Projects:</i></p> <ul style="list-style-type: none"> • There is a short-term increase in the risk to contractors during construction and demolition activities, particularly within existing QD arcs. • Long-term, minor, beneficial effects would be expected from the removal of ACM and LBP in older buildings, by providing onsite EOD training, and by upgrading and modernizing munitions storage. <p><i>Modifications to Runway 6-24:</i></p> <ul style="list-style-type: none"> • Long-term, beneficial effects would occur. Modifications to the runway would bring Runway 6-24 into compliance with Runway Safety Area standards, decrease bird/wildlife-aircraft strike hazard potential (as a result of relocation Cayuga Creek), increase maneuvering space for aircraft, and decrease vertical encroachment into the approach and departure vectors (as a result of acquiring the 30-acre parcel).

Resource Area	Past Actions	Existing Conditions	Proposed Action	Known Future Actions
Water and Soil Resources	Surface water, groundwater, wetlands, and soil resources have been modified from their original states by development activities.	Storm water discharge to Cayuga Creek is within permitted limits.	Long-term, negligible to minor, adverse effects could occur on groundwater and surface water. Short-term, minor, adverse effects on soil could occur until chemicals have degraded from microbial action.	<p><i>New Construction Projects:</i></p> <ul style="list-style-type: none"> Short-term, minor, adverse effects would be expected from construction activities. <p><i>Small Arms Range:</i></p> <ul style="list-style-type: none"> Short-term, minor, adverse effects could occur as a result of construction activities. <p><i>Modifications to Runway 6-24:</i></p> <ul style="list-style-type: none"> Short-term and permanent, minor, adverse effects on hydrologic characteristics from relocating 2,440 linear feet of Cayuga Creek. Short-term and permanent, minor, adverse effects on hydrologic characteristics from 0.28 acres of riparian emergent wetland. Short-term effects on water quality could occur. Long-term effects on hydrology and sediment transport would be minimized by mimicking the natural stream morphology in a 1,950-foot bioengineered streambed. Downstream portions might be mitigated with similar bioengineered erosion protection. Long-term, minor, effects on the 100-year floodplain would occur as a result of converting 1.5 acres of grassland to imperious surfaces in the floodplain.
Biological Resources	The alteration of native vegetation and development activities has resulted in limited forested and grassy areas with diminished value to support species habitat and diversity at Niagara Falls ARS.	Installation operations impact wildlife habitat.	Long-term, indirect, beneficial effects on native vegetation would be expected by the use of targeted herbicide on nonnative vegetation. Long-term, indirect, negligible adverse effects on aquatic species could occur from herbicide application, if herbicides come in contact with aquatic species.	<p><i>New Construction Projects:</i></p> <ul style="list-style-type: none"> Long-term, negligible to minor, direct adverse effects would occur as a result of vegetation removal, particularly for the Joint Medical Facility, Flight Simulator Facility, Munitions Facility, and EOD Range. Short-term, negligible to minor, adverse effects on wildlife could occur as a result of disturbance during construction. <p><i>Small Arms Range:</i></p> <ul style="list-style-type: none"> Short-term, minor, adverse effects could occur during construction activities. Long-term, negligible to minor, adverse effects would occur as a result of vegetation removal and the permanent loss of habitat.

Resource Area	Past Actions	Existing Conditions	Proposed Action	Known Future Actions
Hazardous Materials and Wastes	Hazardous wastes and materials, LBP, ACM, PCBs, and IRP sites occur at Niagara Falls ARS as a result of its historic use as a military installation.	Hazardous wastes and materials, LBP, ACM, PCBs, and IRP sites are managed in accordance with USAF and other applicable Federal regulations.	Short-term, negligible, adverse effects could occur during herbicide applications since herbicides would be treated as hazardous materials in the event of a spill.	<p><i>New Construction Projects:</i></p> <ul style="list-style-type: none"> • Short-term, minor, adverse effects during construction activities could occur. Construction would require use of small quantities of hazardous materials and generate small quantities of hazardous wastes. • Long-term, negligible to minor, adverse effects could occur from increased generation of hazardous and petroleum wastes. • Short-term, minor, adverse effects could occur from encountering contaminated groundwater in the vicinity of IRP Site 13 during C-130 Flightline Operations Facility construction.

Water and Soil Resources. Water quality of Cayuga Creek has historically been affected by land uses. The Proposed Action has a negligible to minor potential to contribute to adverse cumulative effects on water quality when considered in conjunction with other ongoing activities.

Biological Resources. Herbicide applications would remove vegetation, but it would target nonnative weed species, the removal of which could indirectly benefit native species. Other actions, including several new construction projects and the small arms range would result in vegetation removal. Cumulatively, negligible effects on vegetation and wildlife would be expected.

Hazardous Materials and Wastes. No cumulative effects on hazardous materials and wastes have been identified. The combination of all projects could result in short-term, minor, adverse effects during herbicide application (in the event of a spill) and construction activities, but these would not be significant. Existing hazardous material and waste management plans would accommodate short- and long-term, minor increases in usage.

5.3 Unavoidable Adverse Effects

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Hazardous Wastes and Materials. Products containing hazardous materials (or treated as hazardous materials, in the event of an herbicide spill) would be procured and used during application. Quantities used to operate machinery would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. Contractors must report use of hazardous materials. It is anticipated that the quantity of hazardous wastes generated from proposed construction activities would be negligible. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations, as well as the Hazardous Waste Management Plan. The potential for spills during chemical handling are unavoidable risks associated with the Proposed Action.

5.4 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Environmental effects of the Proposed Action would occur entirely within the boundaries of Niagara Falls ARS. The Proposed Action involves no changes in land use and would not conflict with any applicable off-installation land use ordinances or designated clear zones.

5.5 Relationship Between the Short-term Use of the Environment and Long-term Productivity

Short-term uses of the biophysical components of the human environment include direct impacts, usually related to construction activities that occur over a period of less than 5 years. Long-term uses of the human environment include those impacts that occur over a period of more than 5 years, including permanent resource loss.

This EA identifies potential short-term, adverse effects on the natural environment as a result of herbicide application and dry chemical testing activities. Proposed herbicide application and dry chemical testing activities would be expected to increase the long-term productivity of Niagara Falls ARS by helping to manage unwanted vegetation growth and ensuring the Fire Department's dry chemical equipment is in good working order.

5.6 Irreversible and Irretrievable Commitments of Resources

An irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that cannot be reversed or recovered, even after an activity has ended and facilities have been decommissioned. A commitment of resources is related to use or destruction of nonrenewable resources, and effects that such a loss will have on future generations.

Material Resources. Material resources irretrievably used for the Proposed Action include steel, concrete, and other building materials. Such materials are not in short supply and would not be expected to limit other unrelated construction activities. The irretrievable use of material resources would not be considered significant.

Biological Resources. The Proposed Action would result in minimal loss of weeds and wildlife habitat at the proposed herbicide sites. This loss is not considered significant.

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APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

Appendix A

Applicable Laws, Regulations, Policies, and Planning Criteria

When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws as well as Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

NOTE: This is not a complete list of all applicable laws, regulations, policies, and planning criteria potentially applicable to documents, however, it does provide a general summary for use as a reference.

Noise

Federal, state, and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978, requires compliance with state and local noise laws and ordinances.

The U.S. Department of Housing and Urban Development (HUD), in coordination with the Department of Defense (DOD) and the FAA, has established criteria for acceptable noise levels for aircraft operations relative to various types of land use.

The USAF's Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near USAF installations.

Land Use

The term "land use" refers to real property classifications that indicate either natural conditions or the types of human activities occurring on a defined parcel of land. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories.

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, August 1, 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the HUD and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQSs) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially

designated by the USEPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCR). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action might have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency could also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and state-approved requirements.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS, contribute to an increase in the frequency or severity of violations of NAAQS, or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

The General Conformity Rule applies to Federal actions in nonattainment or maintenance areas. The rule applies only to actions where the total direct and indirect emissions from the action meet or exceed the *de minimis* thresholds presented in 40 Code of Federal Regulations (CFR) 93.153. If total emissions do not meet or exceed the *de minimis* thresholds, then a full Conformity Determination would not be required.

On May 13, 2010, the USEPA issued the Greenhouse Gas (GHG) Tailoring Rule that sets thresholds for GHG emissions from large stationary sources. The new GHG emissions thresholds for large stationary sources define when permits under the New Source Review Prevention of PSD and Title V Operating Permit programs are required for new and existing industrial facilities. Beginning January 2, 2011, large industrial facilities that have CAA permits for non-GHG emissions must also include GHGs in these permits. Beginning July 1, 2011, all new construction or renovations that increase GHG emissions by 75,000 tons of carbon dioxide or equivalent per year or more will be required to obtain construction permits for GHG emissions. Operating permits will be needed by all sources that emit GHGs above 75,000 tons of carbon dioxide or equivalent per year beginning in July 2011.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (October 5, 2009) established an integrated strategy towards sustainability in Federal Government and to make reduction of greenhouse gas emissions a priority for the Federal agencies. Federal agencies are required to increase energy efficiency; measure, report, and reduce their greenhouse gas emissions; conserve and protect water resources through efficiency, reuse, and storm water management; and eliminate waste, recycle, and prevent pollution. This EO requires all Federal agencies to establish and report a percentage reduction target for agencywide reductions of scope 1 to 3 greenhouse gas emissions by fiscal year 2020, using fiscal year 2008 as the baseline year. Each agency shall consider reductions associated with reducing energy intensity in agency buildings; increasing agency use of renewable energy and implementing renewable energy generation projects on agency property; and reducing the use of fossil fuels by using low greenhouse gas emitting vehicles including alternative fuel vehicles; optimizing the number of vehicles in the agency fleet; and reducing, if the agency operates a fleet of at least 20 motor vehicles, the agency fleet's total consumption of petroleum products by a minimum of 2 percent annually through the end of fiscal year 2020, relative to a baseline of fiscal year 2005.

Health and Safety

Human health and safety relates to workers' health and safety during demolition or construction of facilities, or applies to work conditions during operations of a facility that could expose workers to conditions that pose a health or safety risk. The Federal Occupational Safety and Health Administration (OSHA) issues standards to protect persons from such risks, and the DOD and state and local jurisdictions issue guidance to comply with these OSHA standards. Safety also can refer to safe operations of aircraft or other equipment.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements Air Force Policy Directive (AFPD) 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements.

AFI 91-202, *USAF Mishap Prevention Program*, implements AFPD 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 23, 1997), directs Federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Federal agencies must also ensure that their policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks.

Geology and Soil Resources

Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed the Farmland Protection Policy Act (FPPA) to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland (7 CFR Part 658). Prime farmland is described as soils that have a combination of soil and landscape properties that make them highly suitable for cropland, such as high inherent fertility, good water-holding capacity, and deep or thick effective rooting zones, and that are not subject to periodic flooding. Under the FPPA, agencies are encouraged to conserve prime or unique farmlands when alternatives are practicable. Some activities that are not subject to the FPPA include Federal permitting and licensing, projects on land already in urban development or used for water storage, construction for national defense purposes, or construction of new minor secondary structures such as a garage or storage shed.

Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce,

recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL plans typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The USEPA issued a Final Rule for the CWA concerning technology-based Effluent Limitations Guidelines and New Source Performance Standards for the Construction and Development point source category. All NPDES storm water permits issued by the USEPA or states must incorporate requirements established in the Final Rule. As of February 1, 2010, all new construction sites are required to meet the non-numeric effluent limitations and design, install, and maintain effective erosion and sedimentation controls. In addition, construction site owners and operators that disturb 1 or more acres of land are required to use best management practices (BMPs) to ensure that soil disturbed during construction activities does not pollute nearby water bodies. Effective August 1, 2011, construction activities disturbing 20 or more acres must comply with the numeric effluent limitation for turbidity in addition to the non-numeric effluent limitations. The maximum daily turbidity limitation is 280 nephelometric turbidity units (ntu). On February 2, 2014, construction site owners and operators that disturb 10 or more acres of land are required to monitor discharges to ensure compliance with effluent limitations as specified by the permitting authority. Construction site owners are encouraged to phase ground-disturbing activities to limit the applicability of the monitoring requirements and the turbidity limitation. The USEPA's limitations are based on its assessment of what specific technologies can reliably achieve. Permittees can select management practices or technologies that are best suited for site-specific conditions.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Under Section 307, Federal agency activities that affect any land or water use or natural resource of a coastal zone must be consistent to the maximum extent practicable with the enforceable policies of the state's coastal management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial

contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of the Interior upon the recommendation of the governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (October 5, 2009), directed the USEPA to issue guidance on Section 438 of the EISA. The EISA establishes into law new storm water design requirements for Federal construction projects that disturb a footprint of greater than 5,000 square feet of land. Under these requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology would be calculated and site design would incorporate storm water retention and reuse technologies to the maximum extent technically feasible. Post-construction analyses will be conducted to evaluate the effectiveness of the as-built storm water reduction features. These regulations are applicable to DOD Unified Facilities Criteria. Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*.

EO 13514 also requires Federal agencies to improve water efficiency and management by reducing potable water consumption intensity by 2 percent annually, or by 26 percent, by Fiscal Year (FY) 2020, relative to a FY 2007 baseline. Furthermore, Federal agencies must also reduce agency industrial, landscaping, and agricultural water consumption by 2 percent annually, or 20 percent, by FY 2020, relative to a FY 2010 baseline.

EO 13547, *Stewardship of the Ocean, Our Coasts, and the Great Lakes* (July 19, 2010), establishes a national policy to ensure the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes ecosystems and resources; enhance the sustainability of ocean and coastal economies; preserve our maritime heritage; support sustainable uses and access; provide for adaptive management to enhance our understanding of and capacity to respond to climate change and ocean acidification; and coordinate with our national security and foreign policy interests.

Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to

jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess; offer to or sell, barter, purchase, or deliver; or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport, or carry from one state, territory, or district to another; or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

The Sikes Act (16 U.S.C. 670a-670o, 74 Stat. 1052), as amended, Public Law (P.L.) 86-797, approved September 15, 1960, provides for cooperation by the Departments of the Interior and Defense with state agencies in planning, development, and maintenance of fish and wildlife resources on military reservations throughout the United States. In November 1997, the Sikes Act was amended via the Sikes Act Improvement Amendment (P.L. 105-85, Division B, Title XXIX) to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate this program, the amendments require the Secretaries of the military departments to prepare and implement Integrated Natural Resources Management Plans (INRMPs) for each military installation in the United States unless the absence of significant natural resources on a particular installation makes preparation of a plan for the installation inappropriate. INRMPs must be reviewed by the USFWS and applicable states every 5 years. The National Defense Authorization Act of 2004 modified Section 4(a) (3) of the ESA to preclude the designation of critical habitat on DOD lands that are subject to an INRMP, if the Secretary of the Interior determines in writing that such a plan provides a benefit to the species for which critical habitat is proposed for designation.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970), states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other

pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001), creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. EO 13186 provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds. The Federal Noxious Weed Act (Public Law 93-629) of 1975, as amended in 1990, established a Federal program to control the spread of noxious weeds. The Secretary of Agriculture was given the authority to designate plants as noxious weeds by regulation and the movement of such weeds in interstate or foreign commerce was prohibited except under permit. The Secretary was also given authority to inspect, seize, and destroy products and quarantine areas, if necessary, to prevent the spread of such weeds. The Secretary was also authorized to cooperate with Federal, state, and local agencies; farmer associations, and private individuals in measures to control, eradicate, prevent, or retard the spread of noxious weeds. This law also requires that any environmental assessments or impact statements that are required to implement plant control agreements must be completed within 1 year of the time the need for the document is established.

EO 13112, *Invasive Species* (February 3, 1999), provides direction to use relevant programs and authorities to prevent introduction of invasive species, detect and respond rapidly to control populations of invasive species, monitor invasive species populations, provide restoration of native species and habitat conditions in ecosystems that have been invaded, conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species, and promote public education on invasive species with means to address them. EO 13112 was created to minimize the economic, ecological, and human health impacts that invasive species cause.

Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations, and develop agencywide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal agency.

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and

authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal “Superfund” to respond to emergencies immediately. Although the “Superfund” provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters. Section 120(h) of CERCLA requires Federal agencies to notify prospective buyers of contaminated Federal properties about the type, quantity, and location of hazardous substances.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007 [revoking EO 13148]) sets a goal for all Federal agencies that promotes environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of, increase diversion of solid waste as appropriate, and maintain cost effective waste prevention and recycling programs in their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to “incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA.”

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for “cradle-to-grave” management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with “hazardous substances” or “extremely hazardous substances” to prepare comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a contaminated site, it can be held liable for cleanup as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as “owners.” However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the “innocent purchaser” defense under CERCLA. According to Title 42 United States Code (U.S.C.) 9601(35), the current owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” before buying the property to use this defense.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated

biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and could cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II provides statutory framework for “Asbestos Hazard Emergency Response,” which applies only to schools. TSCA Title III, “Indoor Radon Abatement,” states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction,” directs Federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards.” Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

Energy

The Energy Policy Act (EPAct) of 2005, P.L. 109-58, amended portions of the National Energy Conservation Policy Act and established energy management goals for Federal facilities and fleets. Section 109 of EPAct directs new Federal buildings (commercial or residential) to be designed 30 percent below American Society of Heating, Refrigerating, and Air-Conditioning Engineers standards or the International Energy Code. Section 109 also includes the application of sustainable design principles for new buildings and requires Federal agencies to identify new buildings in their budget requests that meet or exceed the standards. Section 203 of EPAct requires that all Federal agencies’ renewable electricity consumption meet or exceed 3 percent from FYs 2007 through 2009, with increases to at least 5 percent in FYs 2010 through 2012 and 7.5 percent in 2013 and thereafter. Section 203 also establishes a double credit bonus for Federal agencies if renewable electricity is produced onsite at a Federal facility, on Federal lands, or on Native American lands. Section 204 of EPAct establishes a photovoltaic energy commercialization program for Federal buildings.

EO 13514, *Federal Leadership In Environmental, Energy, And Economic Performance* (dated October 5, 2009), directs Federal agencies to improve water use efficiency and management; implement high performance sustainable Federal building design, construction, operation and management; and advance regional and local integrated planning by identifying and analyzing impacts from energy usage and alternative energy sources. EO 13514 also directs Federal agencies to prepare and implement a Strategic Sustainability Performance Plan to manage its greenhouse gas emissions, water use, pollution prevention, regional development and transportation planning, sustainable building design and promote sustainability in its acquisition of goods and services. Section 2(g) requires new construction, major renovation, or repair and alteration of buildings to comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings. The CEQ regulations at 40 CFR 1502.16(e) directs agencies to consider the energy requirements and conservation potential of various alternatives and mitigation measures.

Section 503(b) of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, instructs Federal agencies to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. EO 13423 sets goals in energy efficiency, acquisition, renewable energy, toxic chemical reduction, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Sustainable design measures such as the use of “green” technology (e.g., photovoltaic panels, solar collection, heat recovery systems, wind turbines, green roofs, and habitat-oriented storm water management) would be incorporated where practicable.

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APPENDIX B

PUBLIC INVOLVEMENT/INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE LETTER AND LIST

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) Materials



DEPARTMENT OF THE AIR FORCE AIR FORCE RESERVE COMMAND

May 2, 2011

MEMORANDUM FOR: SEE DISTRIBUTION LIST

FROM: 914 MSG/CE
2405 Franklin Drive
Niagara Falls ARS, NY 14304-5063

SUBJECT: Environmental Assessment for Review and Comment

The Air Force Reserve Command (AFRC) and 914th Airlift Wing (914 AW) have prepared a *Draft Environmental Assessment (EA) Addressing Expanded Herbicide Applications and the Relocation of Dry Chemical Testing at Niagara Falls Air Reserve Station (ARS), New York*. The environmental impact analysis process for this proposal is being conducted by AFRC in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act of 1969. The Draft EA for the proposed expanded herbicide applications and the relocation of dry chemical testing at Niagara Falls ARS, New York, is included with this correspondence as Attachment 1.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft EA and solicit your comments concerning the proposal and any potential environmental concerns you may have. Please provide written comments or information regarding the Draft EA at your earliest convenience but no later than 30 days from the receipt of this letter. Appendix B of the Draft EA contains a listing of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposed activities, please include them in your distribution of this letter and the attached materials.

Please address questions or comments on the proposal to our consultant, HDR. The point-of-contact at HDR is Mr. Bruce Ramo. He can be reached at (678) 767-8571. Please forward your written comments to Mr. Ramo c/o HDR, 2600 Park Tower Drive, Suite 100, Vienna, Virginia 22180. Thank you for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Pat Battista".
Pat Battista
Base Civil Engineer

Atch: Draft EA for Herbicide and Dry Chemical Testing at NFARS

Distribution List for the Draft and Final EA

New York State Department of
Environmental Conservation
Buffalo Regional Headquarters
270 Michigan Avenue
Buffalo, NY 14203

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207

Mr. Gregory Tessmann
District Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
Lockport Service Center
4487 Lake Avenue
Lockport, NY 14094

Mr. Kevin P. O'Brien, P.E.,
Commissioner Niagara County Dept.
of Public Works
Brooks County Office Building
59 Park Avenue
Lockport, NY 14094

Mr. Steven Richards
Town of Niagara Falls
7105 Lockport Road
Niagara Falls, NY 14305

Ms. Ruth Pierpont
New York State Office of Parks, Recreation,
and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189
Waterford, NY 12188

Mr. Arthur F. Kroening
Superintendent
Town of Wheatfield Highway Department
6860 Ward Road
Niagara Falls, NY 14304

Mr. Kofi Fynn-Aikins
U.S. Fish and Wildlife Service
Lower Great Lakes Region
Fishery Resources Office
405 North French Road
Suite 120 A
Amherst, NY 14228

City of Niagara Falls
Office of Environmental Services
City Hall
745 Main Street
Niagara Falls, NY 14302

FEMA Region II
Office of Intergovernmental Affairs
26 Federal Plaza, Suite 1307
New York, NY 10278

Ms. Christine D'Aloise
Acting Director, HSEQ
Niagara Frontier Transportation Authority
181 Ellicott Street
Buffalo, NY 14203

No comments on the Draft EA were received from the local, state, or Federal agencies.

The Draft EA and FONSI were made available to the general public for a 30-day review period. The Notice of Availability (NOA) was published on 12 May 2011 in the *Niagara Gazette*, as shown below. The Draft EA and FONSI were also made available to the general public at the Niagara Falls Public Library. No comments from the general public were received.

8A Thursday, May 12, 2011

Niagara Gazette

NATION

sus Bureau.

The governor said the state is asking local offi-

Tickets also are on sale in the Hospital Gift Shop, or call 298-2144 or 298-2146

PUBLIC NOTICE

Notice of Availability

Draft Environmental Assessment Addressing Expanded Herbicide Applications and the Relocation of Dry Chemical Testing at Niagara Falls Air Reserve Station, New York

Niagara Falls Air Reserve Station, New York – A Draft Environmental Assessment (EA) for expanded herbicide application and relocation of dry chemical testing at Niagara Falls Air Reserve Station is being prepared. The 914 AW proposes to expand herbicide applications and relocate annual fire truck dry chemical testing at Niagara Falls ARS to enable personnel to perform activities necessary to meet USAF mission and emergency response activities at the installation.

The 914 AW is proposing to issue a Finding of No Significant Impact (FONSI) based on the Draft EA. The analysis considered in detail the potential effects of the Proposed Action and the No Action Alternative on the following resource areas: air quality, land use, safety, water and soil resources, biological resources, and hazardous materials and waste. The results of the Draft EA indicate that the Proposed Action would not have a significant impact on the environment, indicating that a FONSI would be appropriate. An Environmental Impact Statement is not considered necessary to implement the Proposed Action.

Copies of the Draft EA describing the Proposed Action in detail and presenting the analysis, as well as the Draft FONSI, are available for review at the Niagara Falls Public Library, Earl W. Brydges Building, 1425 Main Street, Niagara Falls, NY 14305. Public comments on the Draft EA will be accepted until June 13, 2011.

To view the FONSI and EA, please visit the Web site:

<https://newafpims.afnews.af.mil/shared/media/document/AFD-110509-007.PDF>
Written comments and inquiries on the Draft EA and Draft FONSI should be directed to the 914 AW Office of Public Affairs, 2720 Kirkbridge Drive, Niagara Falls ARS, NY, 14304-5001 or call (716) 236-2000.

The speech many historians Americans – consider a this country was almost

For Abraham Lincoln address, he had to win

In order to do that, he During much of 1864,

No nation in history of a civil war. The fed something else novel – whether to prosecute the themselves whether to

George McClellan, for army, whom Lincoln was a Democrat. With the U and Petersburg in the south judged his odds of win

"It seems exceedingly administration will not in August 1864. Then cooperate with the press between the election and he secured his election cannot possibly save it

In the end, a number including Sherman's v

Soldiers went Lincoln

**FOR
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— AB
SECOND**

This newspaper the Civil War by major battles, p

The author is amateur historian the Joplin, Mo., events of 1861 accounts of doz own research.

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APPENDIX C

**MATERIALS SAFETY DATA SHEETS (MSDS) FOR
HERBICIDES AND PURPLE K DRY CHEMICAL**

**MSDSs FOR POTENTIAL HERBICIDES USED
AT NIAGARA FALLS ARS**

MONSANTO Company
Material Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

ROUNDUP PRO® Herbicide

EPA Reg. No.
524-475

Product use
Herbicide

Chemical name
Not applicable

Synonyms
None

Company
MONSANTO Company, 800 N. Lindbergh Blvd., St. Louis, MO, 63167
Telephone: 800-332-3111, Fax: 314-694-5557

Emergency numbers

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night:
1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating
elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: 314-694-4000 (collect calls accepted).

2. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Isopropylamine salt of glyphosate	38641-94-0	41
Surfactant		14.5
Water and minor formulating ingredients		44.5

OSHA Status

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

Emergency overview

Appearance and odour (colour/form/odour): Clear - Amber / Liquid / Sweet

CAUTION!
CAUSES EYE IRRITATION

Potential health effects

Likely routes of exposure
Skin contact, eye contact

Eye contact, short term

May cause temporary eye irritation.

Skin contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

4. FIRST AID MEASURES

Eye contact

Immediately flush with plenty of water.

If easy to do, remove contact lenses.

Skin contact

Take off contaminated clothing, wristwatch, jewellery.

Wash affected skin with plenty of water.

Wash clothes before re-use.

Inhalation

Remove to fresh air.

Ingestion

Immediately offer water to drink.

Do NOT induce vomiting unless directed by medical personnel.

If symptoms occur, get medical attention.

Advice to doctors

This product is not an inhibitor of cholinesterase.

Antidote

Treatment with atropine and oximes is not indicated.

5. FIRE FIGHTING MEASURES

Flash point

none

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

Unusual fire and explosion hazards

Minimize use of water to prevent environmental contamination.

Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), phosphorus oxides (PxO_y), nitrogen oxides (NO_x)

Fire fighting equipment

Self-contained breathing apparatus.

Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protection recommended in section 8.

Environmental precautions

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimize spread.

Keep out of drains, sewers, ditches and water ways.

Notify authorities.

Methods for cleaning up

SMALL QUANTITIES:

Flush spill area with water.

LARGE QUANTITIES:

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Flush residues with small quantities of water.

Minimize use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling

When using do not eat, drink or smoke.

Wash hands thoroughly after handling or contact.

Thoroughly clean equipment after use.

Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.

Emptied containers retain vapour and product residue.

Refer to section 13 for disposal of rinse water.

Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.

Storage

Minimum storage temperature: -15 °C

Maximum storage temperature: 50 °C

Compatible materials for storage: stainless steel, aluminium, fibreglass, plastic, glass lining

Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.

Keep out of reach of children.

Keep away from food, drink and animal feed.

Keep only in the original container.

Partial crystallization may occur on prolonged storage below the minimum storage temperature.

If frozen, place in warm room and shake frequently to put back into solution.

Minimum shelf life: 5 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Surfactant	No specific occupational exposure limit has been established.
Water and minor formulating ingredients	No specific occupational exposure limit has been established.

Engineering controls

No special requirement when used as recommended.

Eye protection

No special requirement when used as recommended.

Skin protection

If repeated or prolonged contact:

Wear chemical resistant gloves.

Respiratory protection

No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Clear - Amber
Form:	Liquid
Odour:	Sweet
Flash point:	none
Specific gravity:	1.169 @ 20 °C / 15.6 °C
Solubility:	Water: Completely miscible.
pH:	4.4 - 5.0
Partition coefficient (log Pow):	< 0.00 (active ingredient)

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of handling and storage.

Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

Materials to avoid/Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on product and components are summarized below.

Acute oral toxicity

Rat, LD50: 5,108 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

Acute dermal toxicity

Rat, LD50 (limit test): > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

No mortality.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol: 2.9 mg/L

Other effects: weight loss, breathing difficulty

Practically non-toxic.

FIFRA category IV.

Skin irritation

Rabbit, 6 animals, OECD 404 test

Days to heal: 3

Primary Irritation Index (PII): 0.5/8.0

Essentially non irritating.

FIFRA category IV.

Eye irritation

Rabbit, 6 animals, OECD 405 test

Days to heal: 3

Slight irritation.

FIFRA category III.

Skin sensitization

Guinea pig, Buehler test:

Positive incidence: 0 %

N-(phosphonomethyl)glycine: {glyphosate}

Mutagenicity

In vitro and in vivo mutagenicity test(s):

Not mutagenic.

Repeated dose toxicity

Rabbit, dermal, 21 days:

NOAEL toxicity: > 5,000 mg/kg body weight/day

Target organs/systems : none

Other effects: none

Rat, oral, 3 months:

NOAEL toxicity: > 20,000 mg/kg diet

Target organs/systems : none

Other effects: none

Carcinogenicity

Mouse, oral, 24 months:

NOEL tumour: > 30,000 mg/kg diet

NOAEL toxicity: ~ 5,000 mg/kg diet

Tumours: none

Target organs/systems : liver

Other effects: decrease of body weight gain, histopathologic effects

Rat, oral, 24 months:

NOEL tumour: > 20,000 mg/kg diet

NOAEL toxicity: ~ 8,000 mg/kg diet

Tumours: none
Target organs/systems : eyes
Other effects: decrease of body weight gain, histopathologic effects

Toxicity to reproduction/fertility

Rat, oral, 3 generations:

NOAEL toxicity: > 30 mg/kg body weight
NOAEL reproduction: > 30 mg/kg body weight
Target organs/systems in parents: none
Other effects in parents: none
Target organs/systems in pups: none
Other effects in pups: none

Developmental toxicity/teratogenicity

Rat, oral, 6 - 19 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight
NOAEL development: 1,000 mg/kg body weight
Other effects in mother animal: decrease of body weight gain, decrease of survival
Developmental effects: weight loss, post-implantation loss, delayed ossification
Effects on offspring only observed with maternal toxicity.

Rabbit, oral, 6 - 27 days of gestation:

NOAEL toxicity: 175 mg/kg body weight
NOAEL development: 175 mg/kg body weight
Target organs/systems in mother animal: none
Other effects in mother animal: decrease of survival
Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on product and components are summarized below.

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 5.4 mg/L
moderately toxic

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 96 hours, static, LC50: 7.3 mg/L
moderately toxic

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 11 mg/L
slightly toxic

Avian toxicity

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
practically non-toxic

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
practically non-toxic

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral/contact, 48 hours, LD50: > 100 µg/bee
practically non-toxic

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: > 1,250 mg/kg soil
practically non-toxic

N-(phosphonomethyl)glycine: {glyphosate}

Bioaccumulation

Bluegill sunfish (*Lepomis macrochirus*):

Whole fish: BCF: < 1
No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 2 - 174 days
Koc: 884 - 60,000 L/kg
Adsorbs strongly to soil.

Water, aerobic:

Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

Product

Recycle if appropriate facilities/equipment available.
Burn in special, controlled high temperature incinerator.
Dispose of as hazardous industrial waste.
Keep out of drains, sewers, ditches and water ways.
Follow all local/regional/national regulations.

Container

Triple rinse empty containers.
Pour rinse water into spray tank.
Store for collection by approved waste disposal service.
Dispose of as non hazardous industrial waste.
Do NOT re-use containers.
Follow all local/regional/national regulations.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not hazardous under the applicable DOT, ICAO/IATA, IMO, TDG and Mexican regulations.

15. REGULATORY INFORMATION

TSCA Inventory

All components are on the US EPA's TSCA Inventory

OSHA Hazardous Components

Surfactant

SARA Title III Rules

Section 311/312 Hazard Categories
Immediate

Section 302 Extremely Hazardous Substances

Not applicable.

Section 313 Toxic Chemical(s)

Not applicable.

CERCLA Reportable quantity

Not applicable.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.

Follow all local/regional/national regulations.

Please consult supplier if further information is needed.

In this document the British spelling was applied.

All tests were conducted following OECD guidelines for Good Laboratory Practices (GLP).

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.

For more information refer to product label.

Please consult Monsanto if further information is needed.

Follow all local/regional/national regulations.

® Registered trademark of Monsanto Company or its subsidiaries.

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

MATERIAL SAFETY DATA SHEET

KleenUp® Pro

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KleenUp® Pro

Synonyms and Chemical name: Isopropylamine salt of glyphosate

EPA Reg. No.: 524-445-65783

Company ID: United Horticultural Supply
419 18th Street
Greeley, CO 80631

Phone #:s Emergency Phone Number: CHEMTREC 1-800-424-9300

Medical Emergency Phone Number: 1-800-228-5635 extension 136

Revisions: New product

MSDS Number: 000514445 Date: 09/04/01 Supersedes: New

2. COMPOSITION INFORMATION ON INGREDIENTS

Chemical Ingredients:	Active Ingredient:	Percent by Weight	
		41	8
	Inert Ingredients: Surfactant (CAS: 61791-26-2)		51
	Water (CAS: 7732-18-5)		

See section 8 for Personal Protective Equipment (PPE)

3. HAZARDS IDENTIFICATION

Emergency Overview: This formulation causes substantial but temporary eye injury. It may be harmful if swallowed or inhaled. Keep out of reach of children. The most likely routes of exposure is skin contact and eye contact.

Appearance & Odor: This formulation is a yellow-amber liquid with a slight odor.

Warning Statements: Avoid strong bases that can react to liberate heat. Reacts with galvanized steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

Potential Adverse Health Effects: Short-term ingestion effects can be irritation to the gastro-intestinal tract, nausea, vomiting or diarrhea. Product may impact by decreasing blood pressure and an increase fluid in lungs. Prolonged overexposure to this product may cause pneumonitis, abnormal heart rhythm and possible systemic problems

Likely routes of Exposure: Dermal and Inhalation

Dermal Contact: This formulation may be harmful if absorbed through the skin. Be sure to wear the proper protective equipment (PPE), see section 8.

Eye Contact: This formulation is corrosive and can cause irreversible eye damage, wear proper PPE, see section 8.

Inhalation Contact: Avoid inhaling vapors or mists. May irritate the respiratory tract, wear proper PPE, see section 8.

Ingestion: Harmful if swallowed, see section 4 for first aid.

Potential Health Effects: The effects are nonspecific: muscle weakness, lethargy, loss of appetite, abdominal pains, headache or

MATERIAL SAFETY DATA SHEET

KleenUp® Pro

shortness of breath.

4. FIRST AID MEASURES

If on Skin: Remove all contaminated clothing. Wash skin, hair and fingernails thoroughly with soap and water. If irritation persists seek medical attention. Wash clothing before reuse.

If Inhaled: Remove to fresh air. If breathing is difficult, please administer oxygen. If breathing stops administer artificial respiration. Get medical attention immediately.

If Swallowed: Drink 1 to 2 glasses of water. Call a physician to get medical attention, the emergency telephone number is 1-800-228-5635 extension 136.

If in eyes: Flush with running water for at least 15 minutes while holding open eyelids to help flush out material. If irritation persists, seek medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: Does not flash **Flammable Limits:** None established
Fire Extinguishing Media: Water, dry chemical, carbon dioxide, or foam if available.
Special Fire Fighting Procedures: May produce toxic and noxious fumes under extreme fire conditions. Wear self-contained breathing apparatus and acid resistant protective clothing.
Fire or Explosion Hazards: Carbon monoxide, nitrogen oxides and phosphorus oxides.
See section 15 for NFPA ratings.

6. ACCIDENTAL RELEASE MEASURES

Release or Spill: Wear PPE outlined in section 8. Contain spill, absorb with clay or other absorbent material; sweep up material and place in container for possible land application according to label use or for proper disposal. The product has a low environmental hazard. Check local, state and federal regulations for proper disposal.

7. HANDLING AND STORAGE

Avoid contact with skin and eyes. Wear PPE outlined in section 8. Wash hands thoroughly after handling or contact and do not eat, drink or smoke until you wash your hands.
Always use original container or compatible containers (stainless steel, aluminum, plastic, fiberglass, glass lined tanks) to store pesticides and herbicides in a secured warehouse or storage building. Incompatible for storage with galvanized steel, unlined mild steel, see section 10.
Keep out of reach of children, away from food, drink and animal feed.
See Section 8 for PPE.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment: have eye wash facilities immediately available at locations where eye contact can occur.

Eye Protection: Chemical goggles.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: Respiratory protection is not normally required.

Ventilation: Not normally required. Work in well-ventilated areas. If vapors exceed the acceptable levels, Wear MSHA/NIOSH approved respirator with cartridges for pesticide vapors.

9. Physical and Chemical Properties

Appearance: Dark yellow-amber liquid **Odor:** Slight odor **Solubility:** Soluble in water

Specific gravity (water= 1): 1.1655 **pH:** 4.4-5.0 (acid)

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

MATERIAL SAFETY DATA SHEET

KleenUp® Pro

10. STABILITY AND REACTIVITY

Chemical Stability: Stable **Conditions to Avoid:** Reacts with bases to liberate heat. Excessive cold temperatures

Incompatibility with Other Materials: Strong bases

Hazardous Decomposition Products: Oxides of nitrogen, phosphorus and carbon formed from combustion.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD50 (rat) > 5000 mg/kg Acute Dermal LD 50 (rabbit) > 5000 mg/kg

Acute Inhalation LC50 (rat) >2.6 mg/L(No mortality)

Eye Irritation: Substantial but temporary eye injury

Inhalation Irritation: Harmful if inhaled

T The target organs/systems are the eyes, respiratory, and gastro-intestinal.

12. ECOLOGICAL INFORMATION

Environmental Fate: Drift or runoff may adversely affect non-target plants.

Avian toxicity: Bobwhite quail LC50> 5,620 mg/kg Mallard duck LC50> 5,620 mg/kg

Arthropod toxicity: Honey bee LD50 > 100µg/bee (practically non-toxic)

Soil organism toxicity: Earthworm > 5,000 mg/kg

Bioaccumulation: No significant bioaccumulation is expected.

Dissipation: Adsorbs strongly to soil

Biodegradation: Inherently biodegradable

13. DISPOSAL CONSIDERATIONS

Product Disposal: Dispose of as hazardous industrial waste. Follow all local/regional/national regulations for disposal. Do not reuse containers.

Container Disposal: Triple rinse (or equivalent) or equivalent, adding rinsate to spray tank. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

14. TRANSPORT INFORMATION

Follow the precautions indicated in the Handling and Storage Section, Section 7 of this MSDS.

DOT Proper Shipping Name: Not regulated by US DOT highway.

U.S. Surface Freight Classification: Compound, Tree or Weed Killing, NOI (NMFC 50320, SUB 2:Class: 60)

MATERIAL SAFETY DATA SHEET

KleenUp® Pro

15. REGULATORY INFORMATION

SARA Hazard Notification/Reporting

SARA Title II, Section 313 None

NFPA & HMIS Hazard Ratings:

NFPA	HMS
1 Health	0 Least
0 Flammability	1 Slight
0 Reactivity	2 Moderate
	3 High
	1 Health
	0 Flammability
	0 Reactivity
	D PPE

SARA Title III Hazard Category:

Immediate Y
Delayed N

Fire N
Reactive N

Sudden Release of Pressure N

Reportable Quantity (RQ) under U.S. CERCLA: None

16. OTHER

Prepared by: Dennis Belau

Approved by: Environmentally/ Regulatory Services

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Platte Chemical Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving it will make their own determination as to its suitability for their purposes prior to use. In no event will Platte Chemical Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

NUFARM AMERICAS INC.

1333 Burr Ridge Parkway, Suite 125A
Burr Ridge, IL 60527-0866

Emergency Phone (Chemtrec): (800) 424-9300

Information: (800) 345-3330

Date Issued: 5/23/03

Supersedes: 9/11/97

Product Code: 1786-RIV

MSDS Number: 178-6

MATERIAL SAFETY DATA SHEET:

Riverdale® Triamine

1. INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Weight %</u>	<u>Common Name</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Dimethylamine Salt of 2,4-Dichlorophenoxy-acetic Acid	2008-39-1	16.3%	DMA Salt of 2,4-D	10 mg/m3 (for 2,4-D Acid)	N/A
Dimethylamine Salt of (+)-R-2-(2-Methyl-4-Chlorophenoxy)propionic Acid	66423-09-4	8.2%	DMA Salt of MCPP-p	N/A	N/A
Dimethylamine Salt of (+)-R-2-(2,4-Dichlorophenoxy)propionic Acid	104786-87-0	8.2%	DMA Salt of 2,4-DP-p	N/A	N/A
Water and Sequesterents	NA	67.3%	Inert Ingredients	N/A	N/A
	Total	100.0%			

2. HEALTH DATA

PRIMARY ROUTE OF ENTRY:

Dermal/Eye: Yes

Oral: Yes

Inhalation: No

SYMPTOMS OF OVEREXPOSURE:

Nonspecific: muscle weakness, lethargy, loss of appetite, abdominal pains, headache, or shortness of breath.

ACUTE HEALTH EFFECTS

Inhalation:

Avoid inhaling vapors or mist. May irritate the respiratory tract or cause dizziness.

Eyes:

Direct and prolonged eye exposure to the concentrated product may cause corneal opacity, irreversible eye damage.

Skin:

Prolonged exposure may cause mild skin irritation and dermal sensitization reactions. Harmful if absorbed through skin, may cause similar symptoms to ingestion.

Ingestion:

May cause muscle weakness, nausea, diarrhea, and abdominal pain. Fall in blood pressure or myotonia (prolonged muscular spasm) may occur under extreme exposure conditions. Can be fatal.

TOXICOLOGICAL DATA

Acute Oral LD50:

2.3 g/ kg; (male rats); 1.8 g/ kg (female rats)

Acute Dermal LD50:

>2 g/ kg (rabbits)

Acute Inhalation LC50:

N/D

Eye Irritation:

severe irritation: corrosive (rabbits)

Dermal Irritation:

mild irritation (rabbits)

Dermal Sensitization:

is a sensitizer (guinea pigs)

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Skin exposure may aggravate existing skin conditions. Exposure to mist may aggravate existing respiratory conditions.

CHRONIC HEALTH EFFECTS:

Agency	Listing	Carcinogen
<u>NTP</u>	<u>IARC</u>	<u>OSHA</u>
NO	NO	NO

Repeated or prolonged overexposure to phenoxy herbicides may cause liver, kidney, gastrointestinal or muscular system effects. The EPA's Science Advisory Panel has given 2,4-D a class D classification (not classifiable as to human carcinogenicity). Various epidemiological studies have yielded conflicting results with the majority being negative. The current scientific consensus is that there is no proven causal association between 2,4-D and cancer. Recent studies have not shown 2,4-D to be a mutagen or teratogen. Other chronic effects of 2,4-DP-p and MCPP-p have not been determined.

3. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

IF IN EYES:

Hold eyelids open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF SWALLOWED:

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

IF INHALED:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN:

Probable mucosal damage may contraindicate the use of gastric lavage.

4. FIRE FIGHTING MEASURES**FLASH POINT (F):**

N/A

FLASH POINT METHOD USED:

None - aqueous solution

EXTINGUISHING MEDIA:

Use CO₂ or dry chemical for small fires and foam, water fog or water stream for large fires. Use water spray to cool closed containers.

COMBUSTION PRODUCTS:

May include, but are not limited to: hydrogen chloride and nitrogen oxides.

SPECIAL FIRE FIGHTING PROCEDURES:

May produce toxic and noxious fumes under extreme fire conditions. Use positive pressure self-contained breathing apparatus and acid resistant protective clothing. Any water used to extinguish the fire should be contained by diking to prevent contamination of the public water system.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Drums of product will burst from steam pressure under prolonged fire conditions.
See Section 13, REGULATORY INFORMATION, for NFPA rating.

5. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Wear the suggested safety equipment when cleaning large spills (section 7). Surround with impervious material such as dirt to prevent run-off. Absorb product with an inert absorbent such as clay granules or wood shavings. Contain all affected material in a closed, marked container for proper disposal. Treat contaminated area with detergent and water. 2,4-D spills are subject to CERLCA (Superfund) reporting requirements. Reportable Quantity (RQ) = 77 gallons of Triamine.

6. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Always use original container to store pesticides in a secured warehouse or storage building. Do not store near seeds, fertilizers, insecticides, or fungicides. Store at temperatures above 32°F. If allowed to freeze, remix before using. Freezing does not alter this product. Containers should be opened in well ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not contaminate water, food, or feed by storage or disposal.

WORK HYGIENIC PRACTICE:

Wash nondisposable gloves thoroughly with soap and water before removing. After using this product, remove clothing and launder separately before reuse, and promptly and thoroughly wash hands and exposed skin with soap and water. Remove saturated clothing as soon as possible and shower.

7. EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION:	Respiratory protection is not normally required. Use a NIOSH/MSHA approved respirator when directly exposed to mist.
VENTILATION:	Open ventilation. Reduce all mist with local exhaust.
PROTECTIVE GLOVES:	Chemical-resistant gloves.
EYE PROTECTION:	Wear splash goggles or face shield when handling.
OTHER PROTECTIVE EQUIPMENT:	Long sleeved shirt, long pants, socks and shoes. Persons engaged in open pouring must wear coveralls or a chemical resistant apron. (See Precautionary Statements on product label for details)

8. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Dark amber liquid, amine odor
SOLUBILITY IN WATER:	100% in water.
BOILING POINT (F):	207°
VAPOR PRESSURE (mm Hg @ 20 C):	that of water
SPECIFIC GRAVITY (H₂O=1):	1.097
pH	7.5 to 8.5
FREEZING POINT (F):	32°
POUNDS PER GALLON:	9.14

9. STABILITY AND REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Avoid fire conditions.
INCOMPATIBILITY:	Strong oxidizers or acids

HAZARDOUS BYPRODUCTS: None

HAZARDOUS POLYMERIZATION: Will Not Occur

10. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

2,4-D, MCPP and 2,4-DP each have a relatively short half-life of, on average 6 to 9, 5 to 17 and 10 days, respectively. Phenoxy herbicides are readily degraded into nontoxicological substances by soil microbes and aquatic microorganisms.

ENVIRONMENTAL FATE

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants.

11. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL:

Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixtures or rinsate is a violation of Federal law and may contaminate groundwater. If product cannot be disposed of by use according to the label, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Triple rinse (or equivalent) and offer for recycling, or puncture and dispose of in a sanitary landfill. Plastic containers are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

12. TRANSPORTATION INFORMATION

DOT REGULATED CONTAINER SIZE:	220 gal, 260 gal (All smaller container sizes are not DOT regulated)
HAZARD CLASS:	9
UN NUMBER:	UN 3082
PACKING GROUP:	III
GUIDE NUMBER:	171
PROPER SHIPPING NAME:	RQ, Environmentally Hazardous Substances, Liquid, N.O.S. (2,4-D Salt)

13. REGULATORY INFORMATION

SARA TITLE III; Section 311/312:

An immediate and delayed health hazard.

SARA TITLE III; SECTION 313-This product contains the following substances subject to the reporting requirements of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372

N/A

REPORTABLE QUANTITY (RQ):

100 lbs of 2,4-D acid equivalent or approximately 77 gallons of Triamine. For releases greater than the RQ, contact the National Response Center at (800)424-8802.

HMIS INFORMATION	
HEALTH:	2
FLAMMABILITY:	1
REACTIVITY:	0
PROTECTIVE:	D

NFPA INFORMATION	
TOXICITY:	2
FIRE:	1
REACTIVITY:	0
SPECIAL:	N

The information given herein is to the best of our knowledge true and accurate. No warranty, however, expressed or implied, is made.

Riverdale

425 West 194th Street
Glenwood IL 60425

Emergency Phone (Chemtrec): (800) 424-9300
Information Phone: (800) 345-3330
Date Issued: 2/17/98
Supersedes: 2/4/92
Product Code: D145R
MSDS Number: 145-1

MATERIAL SAFETY DATA SHEET:

Weedestroy AM-40 Amine Salt

1. INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	Common Name	OSHA PEL	ACGIH TLV
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	2008-39-1	47.30%	DMA Salt of 2,4-D	10 mg/ m ³ (2,4-D Acid)	N/A
Other ingredients including water*	*7732-18-5	52.70%	Inert Ingredients	N/A	N/A
		Total 100.00%			

2. HEALTH DATA

PRIMARY ROUTE OF ENTRY:

Dermal/ Eye: Yes **Oral:** Yes **Inhalation:** No

SYMPTOMS OF OVEREXPOSURE:

Nonspecific: muscle weakness, lethargy, loss of appetite, abdominal pains, headache, or shortness of breath.

ACUTE HEALTH EFFECTS

Inhalation:

Avoid inhaling vapors or mist. May irritate the respiratory tract or cause dizziness.

Eyes:

Direct and prolonged eye exposure to the concentrated product may cause corneal opacity, irreversible eye damage.

Skin:

This product is considered a minimal skin irritant and is not a dermal sensitizer. Harmful if absorbed through the skin. Repeated or prolonged exposure may cause effects similar to those caused by ingestion.

Ingestion:

May cause muscle weakness, nausea, diarrhea, and abdominal pain. Fall in blood pressure or myotonia (prolonged muscular spasm) may occur under extreme exposure conditions. Can be fatal.

TOXICOLOGICAL DATA

Acute Oral LD50: 1000 mg/ kg

Acute Dermal LD50: 1016 mg/ kg

Acute Inhalation LC50: > 3.5 mg/ L

Eye Irritation:

severe irritation (rabbits)

Dermal Irritation: minimal irritation

Dermal Sensitization: not a sensitizer

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Skin exposure may aggravate existing skin conditions. Exposure to mist may aggravate existing respiratory conditions.

CHRONIC HEALTH EFFECTS:

Agency Listing Carcinogen
NTP IARC OSHA
No No No

Repeated or prolonged overexposure to phenoxy herbicides may cause liver, kidney, gastrointestinal or muscular system effects. The EPA's Science Advisory Panel has given 2,4-D a class D classification (not classifiable as to human carcinogenicity). Various epidemiological studies have yielded conflicting results with the majority being negative. The current scientific consensus is that there is no proven causal association between 2,4-D and cancer. Recent studies have not shown 2,4-D to be a mutagen or teratogen.

3. FIRST AID MEASURES**EYE CONTACT:**

Hold eyelids open and flush entire eye with a steady, gentle stream of water for 15 minutes. Get medical attention, preferably an ophthalmologist.

INHALATION:

Remove victim to fresh air. If not breathing, give artificial respiration preferably mouth to mouth. Get medical attention.

INGESTION:

Drink promptly a large quantity of milk, egg whites or gelatin solution, or, if these are not available, drink large quantities of water. Get medical attention. Avoid alcohol. Do not induce vomiting or give anything by mouth to an unconscious person.

SKIN CONTACT:

Wash affected area with soap and water. If irritation persists, get medical attention.

NOTE TO PHYSICIAN:

Probable mucosal damage may contraindicate gastric lavage. If large amounts of the product were ingested, the stomach should be emptied by gastric intubation.

4. FIRE FIGHTING MEASURES**FLASH POINT (F):**

N/A

FLASH POINT METHOD USED:

None- aqueous solution

EXTINGUISHING MEDIA:

Use CO₂ or dry chemical for small fires and foam, water fog, or water stream for large fires. Use water spray to cool closed containers.

COMBUSTION PRODUCTS:

May include, but are not limited to: hydrogen chloride and nitrogen oxides

SPECIAL FIRE FIGHTING PROCEDURES:

May produce toxic and noxious fumes under extreme fire conditions. Use positive pressure self-contained breathing apparatus and acid resistant protective clothing. Any water used to extinguish the fire should be contained by diking to prevent contamination of the public water system.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Drums of product will burst from steam pressure under prolonged fire conditions.

See Section 13, REGULATORY INFORMATION, for NFPA ratings.

5. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Wear the suggested safety equipment when cleaning large spills (section 7) Surround with impervious material such as dirt to prevent run-off. Absorb product with an inert absorbent such as clay granules or wood shavings. Contain all affected material in a closed, marked container for proper disposal. Treat the contaminated area with detergent and water. 2,4-D spills are subject to CERLCA (Superfund) reporting requirements. Reportable Quantity (RQ) = approximately 26 gallons of AM-40 Amine.

6. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Always use original container to store pesticides in a secured warehouse or storage building. Do not store near seeds, fertilizers, insecticides, or fungicides. Store at temperatures above 32 F. If allowed to freeze, rewarm to 40 F, remix thoroughly before using. Freezing does not alter this product. Containers should be opened in well ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not contaminate water, food, or feed by storage or disposal.

WORK HYGIENIC PRACTICE:

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

7. EXPOSURE CONTROL/PERSONAL PROTECTION

Respiratory protection is not normally required. Use a NIOSH/MSHA approved respirator when directly exposed to mist.

VENTILATION:

Open ventilation. Reduce all mist with local exhaust.

PROTECTIVE GLOVES:

Rubber or chemical-resistant gloves (See Precautionary Statements on product label for details.)

EYE PROTECTION:

Wear splash goggles, face shield, or safety glasses with front, brow, and temple protection.

OTHER PROTECTIVE EQUIPMENT:

Long sleeved shirt, long pants, socks and shoes. Persons engaged in open pouring must wear coveralls or a chemical resistant apron.

8. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Dark brown liquid, mild amine odor

SOLUBILITY IN WATER: Infinite in water

BOILING POINT (F): > 212

VAPOR PRESSURE (mm Hg @ 20 C): N/D

SPECIFIC GRAVITY (H₂O = 1): 1.161

pH: 7.5 - 8.5

FREEZING POINT (F): 32

POUNDS PER GALLON: 9.60

9. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Avoid heat conditions

INCOMPATIBILITY: Strong oxidizers or acids

HAZARDOUS BYPRODUCTS: None

Will Not Occur

10. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

2,4-D has a relatively short half-life (on average 6-9 days in soil, 6-7 in grass) and is readily degraded into nontoxicological substances by soil microbes and aquatic microorganisms. Research has shown that 2,4-D does not bioaccumulate to any significant degree in mammals or in other organisms.

ECOTOXICITY:

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants.

11. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL:

Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixtures or rinsate is a violation of Federal law and may contaminate groundwater. If product cannot be disposed of by use according to the label, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Triple rinse (or equivalent), adding rinsate to spray tank. Then offer for recycling, or puncture and dispose of in a sanitary landfill. Plastic containers are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

12. TRANSPORTATION INFORMATION

30 Gal, 55 Gal, 220 Gal, 260 Gal, Tank Truck
(All smaller container sizes are not DOT regulated)

HAZARD CLASS: 9

UN NUMBER: UN 3082

PACKING GROUP: III

GUIDE NUMBER: 171

PROPER SHIPPING NAME: RQ Environmentally Hazardous Substances, Liquid, N.O.S. (2,4-D Salt)

13. REGULATORY INFORMATION

SARA TITLE III; Section 311/312:

An immediate and delayed health hazard.

SARA TITLE III; Section 313- This product contains the following substances subject to the reporting requirements of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

N/A

REPORTABLE QUANTITY (RQ):

100 lbs of 2,4-D acid equivalent or approximately 26 gallons of AM-40. For releases greater than the RQ, contact the National Response Center at (800) 424-8802.

HMIS INFORMATION	
HEALTH:	2
FLAMMABILITY:	1
REACTIVITY:	0
PROTECTIVE:	D

NFPA INFORMATION	
TOXICITY:	2
FIRE:	1
REACTIVITY:	0
SPECIAL:	N

The information given herein is to the best of our knowledge true and accurate. No warranty, however, expressed or implied, is made.



MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

**In Case of Emergency, Call
1-800-888-8372**

1. PRODUCT IDENTIFICATION

Product Name:	BARRICADE 65WG HERBICIDE	Product No.:	A9950A
EPA Signal Word:	Caution		
Active Ingredient(%):	Prodiamine (65.0%)	CAS No.:	29091-21-2
Chemical Name:	N3,N3-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine		
Chemical Class:	Dinitroaniline Herbicide		

EPA Registration Number(s): 100-834

Section(s) Revised: 2

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Kaolin Clay	15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	2 mg/m ³ TWA (respirable)	10 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)**	No
Dispersing Agent	Not Established	Not Established	15 mg/m ³ TWA (total)*	No
Prodiamine (65.0%)	Not Established	Not Established	10 mg/m ³ TWA ***	No

* recommended by manufacturer

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: C, S

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Causes mild eye and skin irritation. Allergic skin reactions are possible.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Yellow granules

Odor: Odorless

Unusual Fire, Explosion and Reactivity Hazards

This product is considered electrically conductive. Static electricity, mechanical sparks, open flames and certain hot surfaces (greater than 680°F [360°C]) can serve as ignition sources for this material.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison

control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method): Not Applicable

Flammable Limits (% in Air): Lower: % Not Applicable Upper: % Not Applicable

Autoignition Temperature: Not Available

Flammability: Not Flammable

Unusual Fire, Explosion and Reactivity Hazards

This product is considered electrically conductive. Static electricity, mechanical sparks, open flames and certain hot surfaces (greater than 680°F [360°C]) can serve as ignition sources for this material.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Sweep up material and place in a compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Handle this material only in electrically conductive equipment. Electrically ground and bond this equipment as well as any worker who could contact a dust cloud formed of this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form. Bulk bags (FIBC) used to contain this material should be either type B or type C. If type C bags are used make sure they are electrically grounded before powder is discharged from the bag. This material is considered explosion class (Kst) 2. This material can energetically decompose at approximately 383°F (195°C). Do not store or process at temperatures above 320°F (160°C).

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact: Where eye contact is likely, use chemical splash goggles.

Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

Inhalation: A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a NIOSH approved respirator with any HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow granules

Odor: Odorless

Melting Point: Not Available

Boiling Point: Not Applicable

Specific Gravity/Density: 0.63 g/cm³

pH: 8.0 (5% in deionized water)

Solubility in H₂O

Prodiamine: 0.013 ppm @ 77°F (25°C)

Vapor Pressure

Prodiamine: <5.6 x 10(-6) mmHg @ 68°F (20°C)

10. STABILITY AND REACTIVITY

Stability: Stable under normal use and storage conditions.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Thermal, mechanical and electrical ignition sources.

Materials to Avoid: Oxidizing agents.

Hazardous Decomposition Products: Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion: Practically Non-Toxic
Oral (LD50 Rat) : > 5,000 mg/kg body weight

Dermal: Slightly Toxic
Dermal (LD50 Rat) : > 2,000 mg/kg body weight

Inhalation: Slightly Toxic
Inhalation (LC50 Rat) : 1.81 mg/l air - 4 hours

Eye Contact: Mildly Irritating (Rabbit)

Skin Contact: Practically Non-Irritating (Rabbit)

Skin Sensitization: Sensitizing (Guinea Pig)

Reproductive/Developmental Effects

Prodiamine: Fetal toxicity at high dose levels (rats); developmental and maternal toxicity observed at 1g/kg/day.

Chronic/Subchronic Toxicity Studies

Prodiamine: Liver (alteration and enlargement) and thyroid effects (hormone imbalances) at high dose levels (rats); decreased body weight gains.

Carcinogenicity

Prodiamine: Benign thyroid tumors (rat). None observed (mouse).

Other Toxicity Information

None.

Toxicity of Other Components

Dispersing Agent

Exposure can result in eye, skin and respiratory tract irritation.

Kaolin Clay

The toxicological properties of this material have not been fully investigated. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. This is expected to be a low hazard for usual industrial handling.

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long term overexposure may affect respiratory function in some individuals.

Target Organs

Active Ingredients

Prodiamine: Liver, thyroid

Inert Ingredients

Dispersing Agent: Eye, skin, respiratory tract

Kaolin Clay: Eye, skin, lung, digestive tract

12. ECOLOGICAL INFORMATION

Summary of Effects

Prodiamine:

Highly toxic to fish and invertebrates. Practically non-toxic to birds and bees.

Eco-Acute Toxicity

Prodiamine: Rainbow Trout 96-hour LC50 0.83 ppm
Bluegill Sunfish 96-hour LC50 0.55 ppm
Daphnia magna 48-hour LC50 0.66 ppm
Bobwhite 8-day Dietary LC50 > 10,000 ppm
Mallard 8-day Dietary LC50 > 10,000 ppm
Bees LC50/EC50 > 100 ug/bee

Eco-Chronic Toxicity

Prodiamine: Not Available

Environmental Fate

Prodiamine:

The information presented here is for the active ingredient, prodiamine.

Does not bioaccumulate. Persistent in soil. Stable in water. Immobile in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
Not regulated.

B/L Freight Classification

Herbicides, NOI

Comments

Water Transport - International
Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Prodiamine, 65%), Marine Pollutant
Hazard Class or Division: Class 9
Identification Number: UN 3077
Packing Group: PG III

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard
Reactive Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

<u>NFPA Hazard Ratings</u>	<u>HMIS Hazard Ratings</u>			
Health:	2	Health:	2	0 Minimal
Flammability:	2	Flammability:	2	1 Slight
Instability:	1	Reactivity:	1	2 Moderate
			4	3 Serious
				4 Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 01/02/1992

Revision Date: 12/03/2004

Replaces: 10/21/2004

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

Material Safety Data Sheet
Dimension* Herbicide

*Trademark of Dow AgroSciences LLC - Dow AgroSciences Canada Inc. is a licensed user

In Case of Emergency Call 519 339 3711

1. Product identification:

Product name: Dimension* Herbicide
Product code numbers: 88828
Product GMID numbers: 173203
MSDS number: DASCI-179
Effective date: August 3, 2001
Date printed: January 6, 2004

Supplier:
Dow AgroSciences Canada Inc.
1144 - 29 Avenue N.E.
Calgary, Alberta,
Canada, T2E 7P1
www.dowagro.ca

This product is regulated under authority of the Pest Control Products Act

2. Composition:

Component	CAS number	%(w/w)
Dithiopyr	097886-45-8	12.7 to 13.00
Other ingredients		87.0 to 87.3
Including		
Proprietary aromatic solvent	064742-94-5	
Proprietary surfactant	not available	
Related reaction products	not available	
Naphthalene ¹	000091-20-3	
1,2,4-trimethylbenzene ¹	000095-63-6	9.9 ²
		1.7 ²

¹contained in proprietary aromatic solvent

² As a component of entire formulation

3. Hazard Identification:

Emergency Overview:

This product is a clear liquid with a mild aromatic odor. Direct contact may cause substantial eye irritation. Avoid inhalation of vapor or mists. This product may be harmful if swallowed.

Special Health Precautions: This product contains a petroleum-based solvent. Health studies have shown that many petroleum-based solvents pose potential human health risks, which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes of solvents contained in this product should be minimized.

Potential Health Effects:

Eyes: Direct contact may cause substantial eye irritation.

Skin contact: Prolonged or repeated contact may cause skin irritation, defatting and drying of the skin that can lead to further irritation and dermatitis.

Skin absorption: A single prolonged exposure is not likely to result in this material being absorbed in harmful amounts.

Ingestion: Small amounts of liquid aspirated during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.

Inhalation: Excessive exposure to the solvents contained in this formulation may cause respiratory irritation and central nervous system depression. Signs and symptoms of excessive exposure may be nausea and/or vomiting.

4. First Aid Measures:

Eyes: Flush eyes with a gentle continuous stream of flowing water for fifteen minutes. Get prompt medical attention.

Skin: Wash or shower with plenty of soap and water. Get medical attention if irritation persists.

Ingestion: Do not induce vomiting unless instructed to do so by qualified medical personnel. If conscious, give individual two glasses of water to drink and get medical attention.

Inhalation: Remove individual to fresh air if breathing difficulty occurs. If breathing has stopped, give artificial respiration.

Note to physician:

This product contains a petroleum-based solvent. In case of acute naphtha overexposure or ingestion, patients should be monitored for signs of respiratory distress. The decision of whether to induce vomiting or not should be made by the attending physician. If lavage is performed, endotracheal control is suggested. The danger of lung aspiration must be weighed against toxicity when considering emptying the

Material Safety Data Sheet
Dimension* Herbicide

*Trademark of Dow AgroSciences LLC - Dow AgroSciences Canada Inc. is a licensed user

In Case of Emergency Call 519 339 3711

stomach. If a burn is present, treat as any thermal burn, after decontamination. There is no specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient.

5. Fire-fighting Measures:

Flash point: 63°C (Tagliabue closed cup)

Flammable limits: LFL: 0.8% for solvent, naphtha

UFL: 7.9% for solvent, naphtha

Auto-ignition temperature: 443°C for solvent, naphtha

Extinguishing media: Use CO₂, foam, dry chemical or water spray.

Sensitivity to mechanical impact/static discharge: Not available

Unusual fire and explosion hazards: Remain upwind. Contain firefighting water for future disposal.

Fire-fighting equipment: Wear positive-pressure self-contained breathing apparatus and full turnout gear.

6. Accidental Release Measures:

Ventilate the spill area. Avoid breathing vapors. Eliminate all ignition sources. Soak up small spills with absorbent material and store in secure containers until safe disposal can be arranged. Avoid the use of water for cleanup. Do not allow spilled material to contaminate water supplies. For large spills, dike and barricade the affected area and contact Dow AgroSciences at 519 339 3711.

7. Handling and Storage:

Handling: Do not handle this product near food, feed or water. Keep out of reach of children or animals. Avoid breathing fumes or vapors, ingestion and contact with eyes, skin or clothing. Ground all containers when transferring material. Remove and wash contaminated clothing before reuse. Users should wash hands and face before eating, drinking, chewing gum, using tobacco or the toilet.

Storage: The minimum recommended storage temperature is 5°C. Store in a well-ventilated area away from excessive heat sources such as steam pipes heat radiators, etc. Do not ship or store this product with foodstuffs, feed, drugs or clothing.

8. Exposure Controls, Personal Protection and Exposure Limits:

Exposure limits: Proprietary aromatic solvent: not available; for naphthalene, ACGIH recommends a TWA of 10 ppm (52 mg/m³) and a STEL of 15 ppm (79 mg/m³), with a skin designation of A4.

Trimethylbenzene: ACGIH recommendation is 25 ppm (123 mg/m³).

Dithiopyr: not available; manufacturer recommends TWA of 0.25 mg/m³, STEL of 0.75 mg/m³.

Proprietary surfactant: not available

Related reaction products: not available

Engineering controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. In confined spaces, where airborne levels may exceed exposure guidelines, provide supplementary exhaust ventilation.

Breathing: Atmospheric levels should be maintained below the exposure guidelines. For emergency and other conditions where the exposure guidelines may be exceeded, workers must wear an approved full or half-face respirator equipped with organic vapor cartridges or canister approved for pesticide use or loose fitting powered air-purifying respirator. Where exposure guidelines may be greatly exceeded, or in confined or poorly ventilated areas, workers must use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

Protective clothing: For brief contact during manufacture, warehousing and transport, wear clean body-covering clothing. During operations where direct contact to the concentrated product may occur, use protective clothing impervious to this product. Selection of specific items such as face shield, respirator, boots, gloves, apron or full body suit will depend on the operation being carried out. Applicators and other field handlers, including persons repairing or cleaning application equipment, must wear coveralls over clean body-covering clothing, impervious gloves and boots. In addition, persons making and/or transferring field dilutions of this product should wear an impervious apron.

Eyes: Use chemical workers' goggles.

Other protection: None stated

9. Physical and Chemical Properties:

Boiling point: 176 to 210°C for solvent, naphtha

Material Safety Data Sheet
Dimension* Herbicide

*Trademark of Dow AgroSciences LLC - Dow AgroSciences Canada Inc. is a licensed user

In Case of Emergency Call 519 339 3711

Vapor pressure: 3 mm Hg at 25°C for solvent, naphtha
Volatility: 85% (approximate)
pH: 4.1 as aqueous emulsion
Appearance: yellow liquid
Odor: mild aromatic
Coefficient of water/oil distribution: not available
Specific gravity: 0.95
Evaporation rate: >1
Solubility in water: emulsifies
Viscosity: 11 cP
Odor threshold: not available
Melting point: not available

10. Stability and Reactivity:

Stability: This product is stable under normal storage conditions.
Incompatibility: Avoid contact with strong oxidizing agents. Avoid ignition sources.
Hazardous decomposition products: None known
Hazardous polymerization: Does not occur

11. Toxicological Information:

Skin absorption: LD50 (rabbit) is >5000 mg/kg.
Ingestion: LD50 (rat) is 3600 mg/kg.
Inhalation: LC50 for rat is 11 mg/L for four hours.
Sensitization: Skin sensitization has been reported in sensitive individuals.
Chronic effects: Repeated exposure to dithiopyr may cause kidney, liver, blood, and adrenal effects as well as thyroid damage. In long-term studies with dithiopyr, liver and kidney toxicity, and effects on the adrenals and spleen were observed.
Cancer: Dithiopyr did not produce any tumours in long-term animal studies. This product contains naphthalene. A NTP report states that a lifetime inhalation exposure to naphthalene resulted in increases in tumours of the nose in rats. In a previous NTP study, lifetime inhalation exposure to naphthalene increased lung tumours in female mice.
Birth defects: No birth defects were observed in rabbit and rat given dithiopyr during pregnancy, even at doses that produced adverse effects on the mothers.
Reproductive effects: No effects were seen on the ability of male or female rat to reproduce when fed dithiopyr for two successive generations.

Mutagenicity: Test results showed that dithiopyr is not a mutagen.

12. Ecological Information:

Dithiopyr is considered toxic to bees and fish, and somewhat toxic to aquatic invertebrates. Dithiopyr is slightly toxic to birds on an acute basis, and relatively non-toxic to birds on a chronic basis. Bio-concentration potential is not available.

Degradation and Metabolism:

Soil/Environment: Half-life of dithiopyr in soil is 17 to 61 days, depending on the formulation type. The major soil metabolites are the di-acid, the normal mono-acid and the reverse mono-acid; these metabolites, themselves, dissipate almost completely within one year. Dithiopyr is stable to soil photolysis.

Animals: In rat, dithiopyr is rapidly absorbed, extensively metabolized and rapidly excreted.

Plants: Not available

13. Disposal Considerations:

Unused unwanted product: Contact Dow AgroSciences or your provincial regulatory agency for disposal information.

Container disposal: Refer to the product label for instructions regarding cleaning and disposal of empty pesticide containers. If these instructions are missing or not understood, contact Dow AgroSciences at 800 667 3852 or your provincial regulatory agency for direction.

14. Transport Information:

For TDG classification and proper shipping name, please refer to the product label, the shipping document, or contact Dow AgroSciences Customer Service at 800 387 4133.

15. Regulatory Information:

Pest Control Products Act registration number: 23003

For information phone: 800 667 3852

Master reference: Rohm and Haas 866676-7

MSDS status: New MSDS (DASCI format)

Date of last revision: Rohm and Haas MSDS: March 15, 1999

16. Other Information:

National Fire Code classification: IIIA

NFPA ratings: Health: 3; Flammability: 2; Reactivity: 0.

**MSDS FOR PURPLE K DRY CHEMICAL TESTING
AT NIAGARA FALLS ARS**



ANSUL INCORPORATED
MARINETTE, WI 54143-2542

PKW MATERIAL SAFETY DATA SHEET
CONFORMS TO DIRECTIVE 2001/58/EC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name: "Purple-K Dry Chemical Extinguishing Agent"
Chemical Name: N/A – This is a mixture/preparation.
CAS No.: N/A – This is a mixture/preparation.
Chemical Formula: N/A – This is a mixture/preparation.
EINECS Number: N/A – This is a mixture/preparation.

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier: ANSUL INCORPORATED
Address: One Stanton Street, Marinette, WI 54143-2542
Prepared by: Safety and Health Department
Phone: 715-735-7411
Internet/Home Page: <http://www.ansul.com>
Date of Issue: September, 2006

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1. Ingredient Name: Potassium Bicarbonate.
Chemical Formula: KHCO_3 .
CAS No.: 298-14-6.
EINECS Number: 206-059-0.
Concentration, Wt %: 90-93 %.
Hazard Identification: See Heading 3.

Ingredient Name: Mica, Muscovite.
Chemical Formula: Mixture/preparation.
CAS No.: 12001-26-2.
EINECS Number: (b).
Concentration, Wt %: <5 %.
Hazard Identification: See Heading 3.

Ingredient Name: Magnesium Aluminum Silicate (Attapulgite Clay or Fuller's Earth).
Chemical Formula: $\text{Mg}_x\text{Al}_y(\text{SiO}_4)_z$.
CAS No.: 8031-18-3.
EINECS Number: (b).
Concentration, Wt %: <5 %.
Hazard Identification: See Heading 3.

Ingredient Name: Methyl Hydrogen Polysiloxane.
Chemical Formula: Mixture/preparation.
CAS No.: 63148-57-2.
EINECS Number: (a).
Concentration, Wt %: <1 %.
Hazard Identification: See Heading 3.

Ingredient Name: Purple Pigment
Chemical Formula: Benzoate Methyl Violet Lake.
CAS NO.: Not Available.
EINECS Number: Not Available.
Concentration, Wt %: 2 %.
Hazard Identification: See Heading 3.

2.2. (i) There are NO substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, in concentrations equal to or greater than those laid down in the table set out in Article 3(3) of Directive 1999/45/EC, nor with lower limits given in Annex I to Directive 67/548/EEC or in Annexes II, III or V to Directive 1999/45/EC.
(ii) There are NO substances for which there are Community workplace exposure limits, which are not already included in (i) above.
(a) EINECS does not include synthetic polymers (these are registered in EINECS under their building blocks, monomers). See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.
(b) EINECS does not include most naturally occurring raw materials. See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.

NOTE: Unless a component presents a severe hazard, it does not need to be considered in the MSDS if the concentration is less than 1%. [According to Directive 1999/45/E.]

3. HAZARDS IDENTIFICATION

FOR HUMANS:**Product:**

This preparation is not classified as dangerous according to Directive 1999/45/EC.

Limit Values for Exposure:

Nuisance dust limit: OSHA TWA: 15 mg/m³
ACGIH TLV-TWA: 10 mg/m³

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, IARC, or OSHA.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SIGNS AND SYMPTOMS:**Acute Exposure:**

Eye Contact: Mildly irritating for short periods of time.
Skin Contact: May be mildly irritating.
Inhalation: May irritate the respiratory tract. Transient cough, shortness of breath.
Ingestion: Not an expected route of entry.

Chronic Overexposure: No data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.**FOR ENVIRONMENT:**

No data available.

4. FIRST AID MEASURES

Eye Contact: Flush with water for a minimum of 15 minutes while holding lids open. If irritation persists, seek medical attention.
Skin Contact: Wash affected area with soap and water. If irritation persists, seek medical attention.
Inhalation: Remove from exposure. If irritation persists, seek medical attention.
Ingestion: If patient is conscious, dilute by drinking large quantities of water.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.

There are NO extinguishing media which must not be used for safety reasons.

NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.

Clean up: Sweep up and reuse or place in a closed container for disposal, see Heading 13.

NO harm to the environment is expected from an accidental release of this preparation.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.
See incompatibility information in Heading 10.

7.2. Storage

NO special conditions are needed for safe storage.
See incompatibility information in Heading 10.
Store in original container. Keep tightly closed until used.
There is minimal danger to the environment from a storage release.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Limit Values for Exposure:

Nuisance dust limit: OSHA TWA: 15 mg/m³
ACGIH TLV-TWA: 10 mg/m³.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Mechanical ventilation is preferred. Dust mask where dustiness is prevalent, or TLV is exceeded.
Use mechanical filter respirator if exposure is prolonged.

8.2.1.2. Hand protection

None normally needed. Use impervious gloves if irritation occurs.

8.2.1.3. Eye protection

Chemical goggles recommended as mechanical barrier for prolonged exposure.

8.2.1.4. Skin protection

No special equipment is needed.

8.2.2. Environmental exposure controls

No special controls are needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance: Violet Powder.
Odor: None.

9.2. Important health, safety, and environmental information

pH: 8.4 to 8.6 at 99 g/L and 20 °C.
Boiling point/boiling range: Not applicable.
Flash point: None.
Flammability (solid/gas): Not flammable.
Explosive properties: Not explosive.
Oxidizing properties: Not an oxidizer.
Vapor Pressure: Not applicable.
Relative Density: Not applicable.
Solubility:
– Water solubility:
 – Potassium bicarbonate: 333 g/L @ 20 °C.
 – Fat solubility: Not soluble.
Partition coefficient, n-octanol/water: Not applicable.
Viscosity: Not applicable.
Vapor density (Air = 1): Not applicable.
Evaporation rate: Not applicable.

9.3. Other information

Auto-ignition temperature: Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

Strong acids, NaK alloy, and $\text{NH}_4\text{H}_2\text{PO}_4$.

10.3. Hazardous decomposition products

Normally stable.

Hazardous polymerization will NOT occur.

Combustion or decomposition products include carbon dioxide.

11. TOXICOLOGICAL INFORMATION

This product has not been tested for toxicological effects. Product is treated as a nuisance dust.

Components:**Potassium Bicarbonate:**

- LD₅₀ (rat) = >2000 mg/kg.
- Skin irritation: Not irritating (Index = 0.5/8).
- Eye irritation: Not irritating (Index = 7.9/110).
- May be irritating to mucous membranes and upper respiratory tract.
- May be harmful if swallowed in large amounts.

Muscovite:

- May be irritating to eyes, skin, or mucous membranes.

Magnesium Aluminum Silicate (Attapulgite Clay or Fuller's Earth):

- Irritating to eyes, skin, mucous membranes.

Target Organs: Lungs.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Not determined.

12.2. Mobility

Not determined.

12.3. Persistence and degradability

Not determined.

12.4. Bioaccumulative potential

Not determined.

12.5. Other adverse effects

Ozone depletion potential: None.

Photochemical ozone creation potential: None

Global warming potential: Carbon dioxide from decomposition or reaction is a global warming gas.

13. DISPOSAL CONSIDERATIONS

No harm to the environment is expected from this preparation.

Dispose of in compliance with national, regional, and local provisions that may be in force.

14. TRANSPORT INFORMATION

Hazard Class or Division: Not a hazardous substance.

For additional transport information, contact Ansul Incorporated.

No harm to the environment is expected from this preparation.

15. REGULATORY INFORMATION

EU Classification: This preparation is not classified as dangerous according to Directive 1999/45/EC.

Nuisance dust limit: OSHA TWA: 15 mg/m³
ACGIH TLV-TWA: 10 mg/m³.

EINECS Status: All components are included in EINECS inventories or are exempt from listing.

EPA TSCA Status: All components are included in TSCA inventories or are exempt from listing.
Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.

Environmental restrictions: None are known.

Restrictions on Marketing and Use: None are known.

Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	<u>1</u>	4. Severe Hazard
FLAMMABILITY:	<u>0</u>	3. Serious Hazard
REACTIVITY:	<u>0</u>	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated D2B – Product may irritate skin or mucous membrane.

Format is from directive 2001/58/EC.

EINECS data is from <http://ecb.jrc.it/existing-chemicals/>

Data used to compile the data sheet is from Ansul Material Safety Data Sheet, June, 2001.

The EU Classification has been changed in accordance with Directive 1999/45/EC and information in the EINECS ESIS files (Existing Substances Information System).

Toxicological information added from the EINECS ESIS (Existing Substances Information System).

A rating under WHMIS has been added, following the Canadian guidelines.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. ANSUL SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

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